Cybernet

System 700

CT-700S

# Service Manual

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## Specifications

| | |
|---|---|
| Power consumption. | 20 Watt. |
| Power supply. | 220V 50 Hz AC. |
| Dimensions. | |
| **Width** | 420 mm. |
| **Height** | 48 mm. |
| **Depth** | 430 mm. |
| **FM** | |
| Frequency range. | 87.5 to 108.0 MHz. |
| Sensitivity. | 10.3 dBf (1.8 microvolt IHF '58). |
| 50 dB quieting sensitivity. | |
| **Mono** | 16.6 dBf (3.7 microvolt IHF '58). |
| **Stereo** | 37.2 dBf (39.2 microvolt IHF '58). |
| Total harmonic distortion. | |
| **Mono** | 0.1% 1 kHz. |
| **Stereo** | 0.2% 1 kHz. |
| S/N. | |
| **Mono** | 75 dB. |
| **Stereo** | 70 dB. |
| Frequency response. | 30 to 15,000 Hz +0, –0.5 dB. |
| Alternate channel selectivity. | 80 dB. |
| Capture ratio. | 1.2 dB. |
| Image rejection ratio. | 70 dB. |
| IF rejection. | 90 dB at 98 MHz. |
| Spurious response rejection. | 85 dB at 98 MHz. |
| AM suppression. | 55 dB. |
| Separation. | |
| **1 kHz** | 50 dB. |
| **10 kHz** | 39 dB. |
| Carrier leak (19 kHz). | 65 dB. |
| Output voltage. | 775 mV. |
| **AM** | |
| Frequency range. | 531 to 1,602 kHz. |
| Sensitivity. | 300 microvolt/m. |
| Selectivity. | 45 dB. |
| Image rejection. | 50 dB at 1 kHz. |
| S/N. | 50 dB. |
| Output voltage. | 300 mV. |

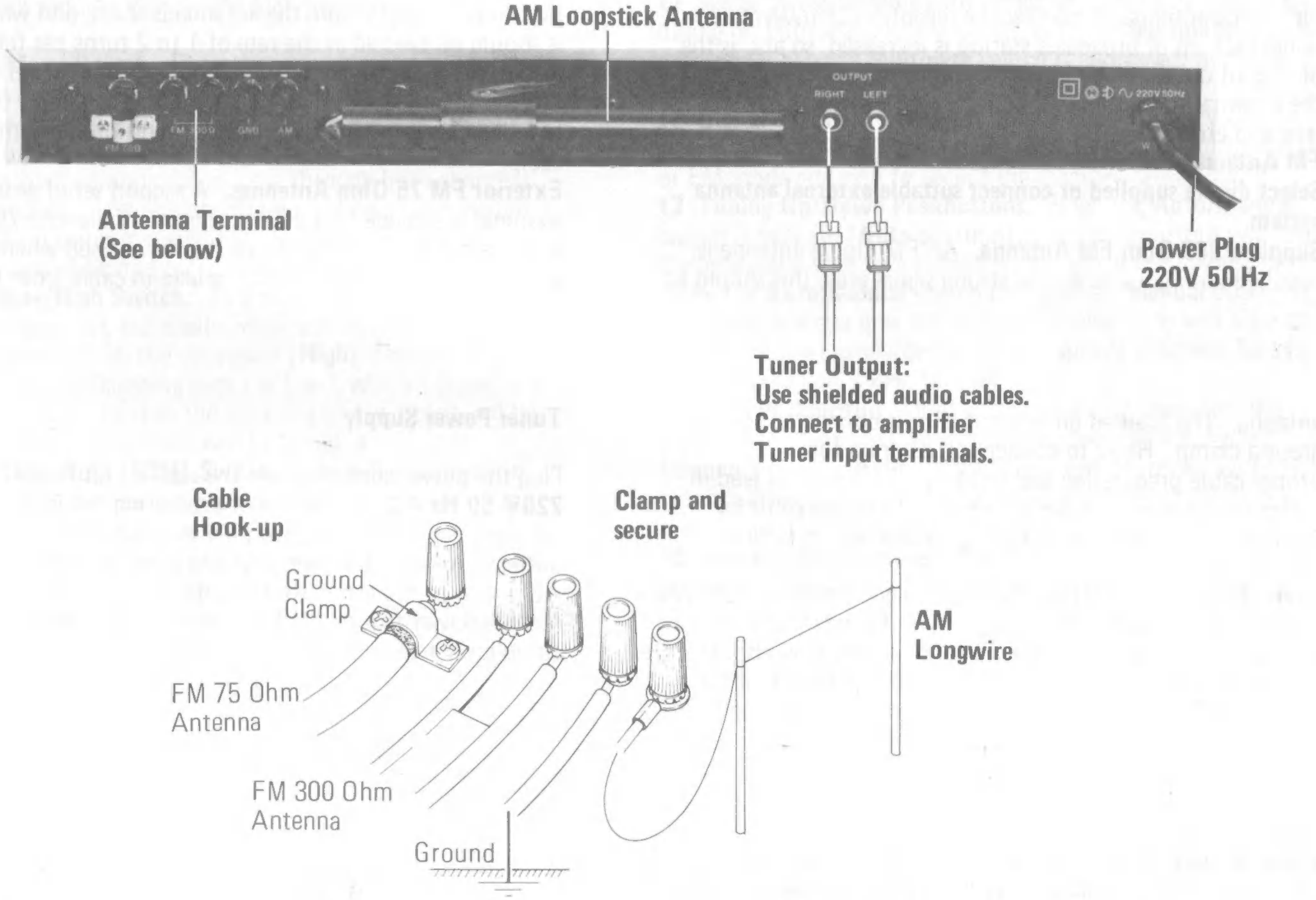
# Instruction Information

### Features

The Cybernet model CT-700S is a high fidelity stereo tuner designed to be incorporated with other System 700-series components – the integrated stereo amplifier model CA-700 and the stereo cassette deck model CCD-700 – into a complete stereo system. It features the following:

Fluorescent digital AM/FM frequency display/Automatic and manual tuning with digital PLL synthesizer/Memory pushbutton tuning for 7 AM and 7 FM stations/Short-time-hold [STH] feature for temporary station tuning/Switchable indicator array for signal strength or multipath interference indication/ Multiplex filter for reduction of residual multiplex pilot noise/ Sensitive dual gate MOSFET in the FM front end/High selectivity IF stage with 3 dual-element ceramic filters/ Phase-locked-loop [PLL] multiplex stage for stable stereo demodulation/Illuminated pushbuttons.

### Tuner Connections

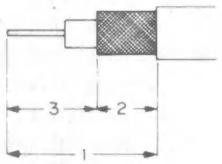


### Installation

Installation of your new tuner is not complicated. However, the following guidances must be followed for satisfactory performance and easy operation of the system.

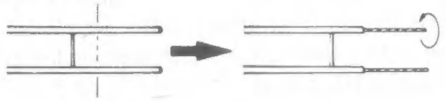
Do not remove the cover – there are no user serviceable parts inside the unit. Refer servicing only to the qualified personnel/The unit must not be exposed to excessive dust, moisture, or direct sources of heat and sunlight/To clean the cover, wipe with soft cloth soaked in a neutral cleaner or a polishing cloth. Do not use benzine or thinner which will damage the cover finish.

**75 Ohm Coaxial Cable**



**1** Remove 30 mm of outer insulation **2** Remove all but 20 mm of the shield braid **3** Remove inner insulation leaving 10 mm of the insulation exposed.

**300 Ohm Twin-Lead Cable**



Remove 20 mm of insulation and 30 mm of bridge. Strand exposed conductors.

**AM Antennas**

**Select use of attached loopstick or additional long-wire antenna for AM reception.**

**Ferrite loopstick antenna.** The ferrite loopstick antenna is a sensitive pickup element of the AM tuner sections. For maximum station reception, it must be properly positioned away from the rear chassis and other metallic surfaces. The associated connecting cables and AC power cord should be dressed as far away as possible. For optimum performance, the antenna should be positioned for maximum signal strength indicator indication when the unit is tuned to the desired AM station.

**External AM antenna.** AM antenna terminals are provided for a properly designed long wire AM antenna system. Such antennas are useful when the desired AM stations are at a considerable distance from the tuner. A simple long wire antenna can consist of a length of single conductor, insulated wire of 30 feet (9 meters) or longer, extending from the tuner external AM antenna terminal to the outside of the building. This wire should be positioned away from electrical cables and appliances. As a rule, the longer and higher the antenna, the better the reception. However, as signal pick up of broadcast station is increased, so also is the pickup of undesirable man-made interference. Therefore, the external AM antenna should be evaluated on a trial-and-error basis.

**FM Antennas**

**Select dipole supplied or connect suitable external antenna system.**

**Supplied 300 Ohm FM Antenna.** An FM dipole antenna is supplied with your tuner. In strong signal area, this should be more than adequate for reception of most FM stations. Antenna connections are made to the terminal strip marked **FM-300 Ohm** located on the rear panel. The dipole leads are connected to the screws marked **300 Ohm**. The ground screw is not used for the dipole antenna. The dipole should be unfolded to its full T-type size and oriented for optimum performance. Dipole antennas are most sensitive to FM reception when positioned perpendicular to the station.

**Exterior FM 300 Ohm Antennas.** For fringe [weak signal] areas, or areas where interference to FM reception is high, the use of a log-periodic, or Yagi-type antenna system is recommended. These antennas are directional and high gain in nature, thus tending to reduce most undesired interference due to reflected signals [multipath distortion] and ignition noise. In areas where stations are located in different directions from the point of reception, the antenna must be repositioned for optimum reception of individual stations. For this reason, a good quality rotor is suggested. To minimize the introduction of multipath distortion and ignition interference by the antenna lead-in wires, the use of balanced 300 Ohm [twin lead] cable is recommended. Unshielded twin-lead is suitable where the lead-in wire length from the antenna is short, and when used it should be twisted at the rate of 1 to 2 turns per foot. Long lead-in wires can act as omnidirectional antenna and can cancel out the advantages of directional antenna systems. Unshielded twin-lead is also more susceptible to ignition noise than shielded cable.

**Exterior FM 75 Ohm Antennas.** A second set of antenna terminal is provided for connecting an unbalanced 75 Ohm antenna cable. These terminals should be used whenever a 75 Ohm coaxial cable is used as a lead-in cable from the antenna. The braided outer conductor is connected to ground clamp. Refer to connection diagram for proper cable preparation and hook-up. This type of lead-in offers the same advantages as shielded 300 Ohm cable by minimizing interference picked up by the lead-in cable.

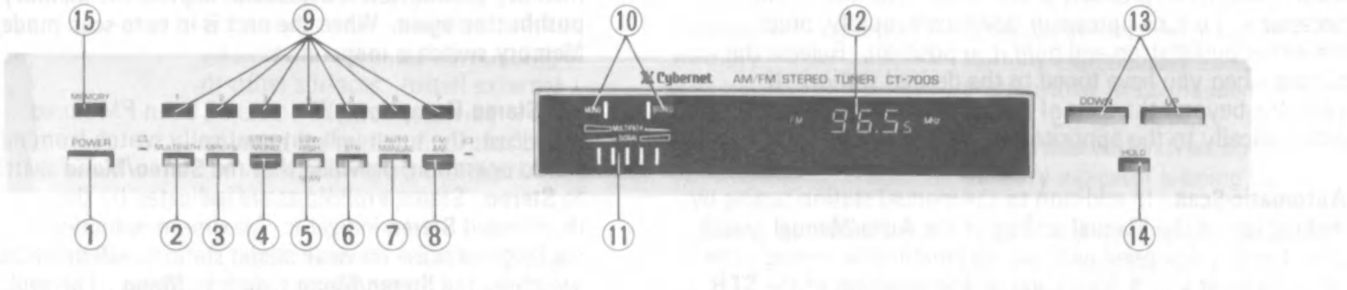
**Grounding.** Under certain conditions a good earth ground will improve performance of the tuner by reducing interference conducted via the power line. A good ground may also improve the AM performance. Good earth ground dictates that the ground wire be as short as possible, connected to a specifically designed, copper clad steel rod driven into moist earth, or to the cold water supply pipe as it enters the building. Clean oxide from rod or pipe and use suitable ground clamp.

**Tuner Output.** Use insulated and shielded audio cables terminated with standard pin [cinch] plug. Connect to the input jack on your amplifier or receiver. Observe proper channel connection.

**Tuner Power Supply**

Plug the power cord plug into the wall outlet, supplying **220V 50 Hz AC**. To be sure of protecting the memory information, the power cord plug should be plugged into the outlet even when the stereo system is not in operation. If the AC power to the tuner is interrupted for more than 24 hours (due to power failure, etc.), the memory information will be completely lost.

**Control Functions**



**1 Power Switch.** Turns the unit on. Lights up when power is on.

**2 Multipath Switch.** When depressed, turns the signal strength indicator function to multipath interference indication. The minimum multipath interference is indicated by minimum indication of the indicators.

**3 Multiplex Filter Switch.** When depressed, a special filter circuit is introduced to reduce the high frequency noise in weak FM stereo reception. This filter does not affect frequency response but reduces slightly the high frequency stereo separation.

**4 Stereo/Mono Switch.** Determines the manner in which a received station will be reproduced through the tuner. When listening to a stereo FM broadcast, depressing this switch will cause the unit to mix the left and right channel signal detected from the broadcast and reproduce it through both channels monophonically. The released **Stereo** setting of this switch will provide automatic stereo FM reception. The mono or stereo mode is indicated by the **Mono/Stereo** indicators.

**5 Scan/Mute/High Switch.** This switch should normally be set to released position, especially when you wish to listen to very weak FM stations. In the depressed [**High**] position, the mute level during scanning over the band, which a signal must overcome in order to stop the scanning and be heard will be high and only strong signals will be tuned in.

**6 Short-Time-Hold [STH] Switch.** Used when automatic scanning to resume scanning automatically after tuner has paused on a station for 5 seconds. If you choose to continue listening to that station, depress the **Hold** pushbutton within 5 seconds.

**7 Auto/Manual Switch.** Determines the manner of **Tuning-Up/Down** pushbuttons usage – automatic-scan or manual one-by-one tuning.

**8 FM/AM Switch.** Selects AM or automatic FM stereo reception.

**9 Memory Pushbutton.** Used to preset 7 AM and 7 FM stations for automatic pushbutton tuning.

**10 Mode Indicators. Mono,** lights up to indicate that the tuner has switched to monophonic FM reception. This indicator is inoperative in AM. **Stereo,** lights up to indicate that the tuner has switched to stereo FM reception.

**11 Signal Strength/Multipath Indicator.** Normally used for tuning on both AM and FM bands, with the **Multipath** switch released. When the **Multipath** switch is depressed, it can be used as reference to multipath interference.

**12 Digital Frequency Display.** Shows the frequency of a station to which the unit is tuned directly. Also indicates AM or FM mode and sign to accept the memory presetting.

**13 Tuning-Up/Down Pushbuttons.** When the **Auto/Manual** switch is released (**Auto** position), these pushbuttons will start the automatic-scan to a station either upscale or downscale. When the **Auto/Manual** switch is depressed (**Manual** position), each time depressing either of these pushbuttons will tune the unit to the next available station assignment precisely 50 kHz away for FM and 9 kHz for AM.

**14 Hold Pushbutton.** Used when automatic-scan with the STH button depressed, to stop the scanning at the desired frequency. If the **Hold** pushbutton is not depressed within 5 seconds after the scan has stopped at a station, the unit will scan automatically to the next station.

**15 Memory Pushbuttons.** Used for automatic memory pushbutton tuning on AM and FM. Each of 7 pushbuttons may be preset to both AM and FM stations.

**Tuner Operation**

With the tuner installed properly as outlined, proceed as follows:

**FM Tuning.** Set the AM/FM switch to FM (pushbutton released). When the tuner is first switched on after plugging the power cord to wall outlet, the lowest FM frequency (87.5 MHz) is tuned. Otherwise, eachtime you turn on the tuner, the previously selected frequency is selected. Set the Auto/Manual switch to Manual (pushbutton released). Press the Tuning-Up switch to tune upscale and press the Tuning-Down switch to tune downscale. Each time either the pushbutton is depressed, the unit is tuned to the next available FM station asignment precisely 50 kHz away. No fine tuning is necessary. To tune upscale or downscale rapidly, press the either Tuning switch and hold it in position. Release the switch when you have tuned to the desired station. If you tune beyond the ends of the scale the unit tunes automatically to the opposite end and continues.

**AM Tuning.** Set the AM/FM switch to AM (pushbutton depressed). When the tuner is first switched on after plugging the power cord to wall outlet, the lowest AM frequency (531 kHz) is tuned. Otherwise, each time you turn on the tuner, the previously selected frequency is selected. Set the Auto/Manual switch to Manual (pushbutton released). Press the Tuning-Up switch to tune upscale and press the Tuning-Down switch to tune downscale. Each time either of the pushbuttons is depressed, the unit is tuned to the next available AM station asignment precisely 9 kHz away. No fine tuning is necessary. To tune upscale or downscale rapidly, press the either pushbutton and hold it in position. Release the button when you have tuned to the desired station. If you tune beyond the ends of the scale the unit tunes automatically to the opposite end and continues.

**Automatic-Scan.** In addition to the manual station tuning by making use of the **Manual** setting of the **Auto/Manual** switch, your tuner is equipped with the automatic-scan tuning. Use either manner **a** or **b** depending on the selection of the **STH** switch:

**a** Set the **STH** switch released (Off). Set the **Auto/Manual** switch to **Auto**. Press the **Tuning-Up** or **-Down** switch. The tuner will scan to a station and continue receiving that station. To rapidly scan-tune from station to station, press the **Tuning-Up** or **-Down** switch for each change.

**b** Set the **STH** switch depressed (On). Set the **Auto/Manual** switch to **Auto**. Press the **Tuning-Up** or **-Down** switch. The tuner will scan to a station and pause on it for 5 seconds. If you choose to continue listening to that station, press the **Hold** switch (or release the **STH** switch). If the **Hold** switch is not depressed within 5 seconds, the tuner will scan to the next station. Be sure to press the Hold switch if you choose to continue listening to that station.

**Pushbutton Tuning.** Each of 7 pushbuttons may be preset to an AM station and an FM station for automatic pushbutton tuning (7 AM/7 FM; 14 in all). Set the **AM/FM** switch to the desired position. Adjust the **Tuning-Up/Down** switches for the desired station. Press the **Memory** switch. Now the word **Memory** appears on the frequency display area to indicate that the unit is ready to accept the memory, for 5 seconds. Press the pushbutton within 5 seconds to set the station. Now the word **Memory** should disappear from the display. Repeat above steps for each pushbutton. You may later use pushbutton to select the station you wish to hear. **If your failed to press the pushbutton within 5 seconds after the Memory pushbutton is depressed, depress the Memory pushbutton again. When the unit is in auto-scan mode, Memory switch is inoperative.**

**FM Stereo Reception.** When tuned to an FM stereo broadcast, the tuner will automatically switch from mono to stereo operation, provided that the **Stereo/Mono** switch is set to **Stereo**. Stereo broadcasts are indicated by the illuminated **Stereo** indicator. Maximum reduction of background noise on weak stereo stations will be obtained by switching the **Stereo/Mono** switch to **Mono**. This will, of course, put the tuner in a monophonic mode of operation. When listening to weak stations, the **Scan/Mute** switch should be released to prevent the tuner from switching to a mute condition due to reduced signal strength.

**FM Multipath Indicator Operation.** FM multipath distortion is caused by a broadcast signal reaching the receiving antenna from 2 directions; #1 direct from broadcaster to the tuner, #2 the same signal but received as a reflection from a nearby building or other surfaces. This indicator is operative only when receiving an FM broadcast and the **Multipath** switch is depressed. Set the **Multipath** switch depressed. Set the **AM/FM** switch to **FM**. Adjust the **Tuning-Up/Down** switches for a fairly strong signal. If more than 2 dots of the indicator are lit, considerably strong multipath interference is suspected. In cooperation with other people, rotate the antenna mast to position your antenna for minimum indication on the **Multipath (Signal Strength)** indicator. Proper FM reception free from multipath distortion is indicated by the minimum (ideally none) lighting up on the indicator. To revert to normal signal strength indication, reset the **Multipath** switch.

**It is recommended that the multipath interference check is made during no modulation condition of the FM broadcast being received, if really possible.**

### Trouble Shooting Guide

The following guides are intended as an aid in correcting the problems you may encounter when setting up the stereo system. Although suggested remedies might seem quite elementary, they may be sufficient to make the corrections without returning the unit to your dealer.

| **Problem** | **Suggested Remedy** |
|---|---|
| Tuner inoperative, when power switched on. | **1** Check for proper power cord insertion to the wall outlet. **2** Blown internal fuse [Be sure to refer checking to qualified personnel]. |
| Indicator lights up but no output from the associated amplifier. | **1** Check proper program selection on your amplifier. **2** Check proper tuner output connection to the amplifier. |
| No output one channel. | **1** Refer to above. **2** Interchange audio cables to input jacks to check if the same channel remains inoperative. |
| Weak AM reception. | **1** Position loopstick antenna for maximum station pick-up. **2** Locate tuner away from metal surface. **If building construction uses alminum foil faced instruction, metal lath, or steel framing, AM reception will be poor.** **3** Install external AM longwire antenna. **4** Locate tuner away from TV set as possible. **5** Locate external AM antenna as far away as possible from interfering source. **6** Install proper earth ground. |
| Weak FM reception. | **1** Check all external antenna connections. **2** Install a properly designed antenna. **3** Position receiving antenna for maximum signal. |
| Multipath distortion. | Caused by a broadcast signal reaching the FM antenna from two directions; #1 direct from transmitter [broadcast], #2 the same signal but received as a reflection from a nearby building or other surfaces. Install external antenna. Position receiving antenna for minimum distortion [while observing the multipath indicator on the tuner]. |
| Noisy FM reception. | **1** Install external antenna. **2** Use shielded lead-in wire. **3** Install proper earth ground. **4** Rotate antenna for maximum signal. **5** Connect power line filters to interfering appliances. |
| Stations will not enter memory. | **1** Before attempting to enter stations into memory pushbuttons, press the Memory switch. **2** Press memory pushbutton within 5 seconds as **Memory** indicator is being on. |
| Scanning will not stop. | **1** Be sure to press Hold switch if you are using **STH** feature. **2** Check antenna connections. |
| Scanning will not stop on weak stations. | **1** Set Scan/Mute switch released. |

## Circuit Description

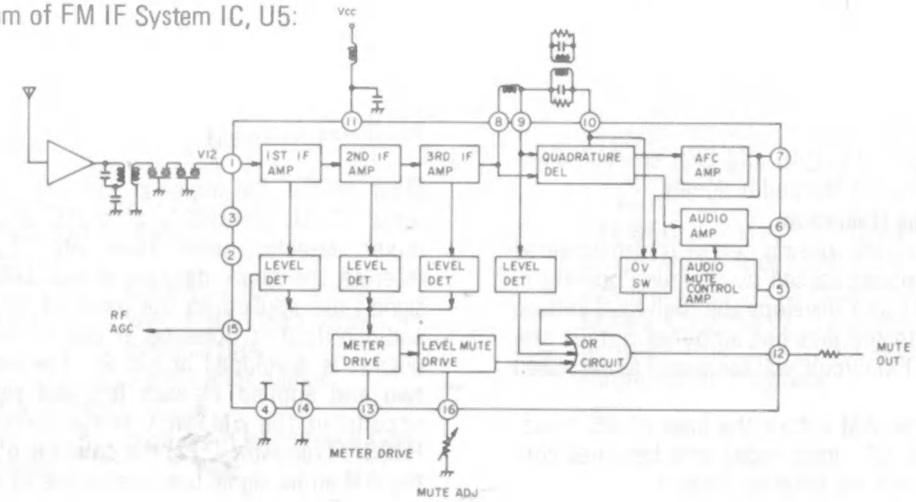
**PLL Frequency Synthesizer (Local Oscillator)**

The FM local oscillator is comprised of a transistor Q3 and a tuning circuit including an oscillator coil T4 and tuning capacitor D4 (varicap diode). The transistor Q3 is being oscillated at a frequency of a receive frequency + 10.7 MHz, and its output is applied to the prescaller IC U6 through a buffer amplifier Q4. The prescaller U6 counts down the local oscillator signal frequency into a lower frequency (1/20) suitable for phase comparison in the PLL circuitry. Thus obtained low frequency is applied to the pin 3 of PLL IC U3 through a buffer amplifier Q8, and the resultant phase error signal developed at pin 10 is applied to the active LPF filter consisting of transistors Q10 and Q11. Finally the filtered error signal is applied to the oscillator tuning capacitor (varicap diode) D4 to correct (or to generate a new) oscillating frequency.

In case of AM local oscillator operation, the oscillating signal output from the AM oscillator is directly applied to the PLL IC input circuit (pin 3) through a buffer amplifier Q9, and the resultant DC error signal is fed back to the AM oscillator tuning diode D6 also through the LPF filter to correct the oscillating frequency.

The FET transistor Q57 is a lock-out signal amplifier, the gate of which is connected to the pin 10 of U3 where a lock-out signal is being developed while a phase locked condition is not established in the U3. The transistor Q57 amplifies the signal and the amplified signal is then rectified by diode D9 and D8 to develop DC voltage to be used for muting control, thus reducing undesirable noises during scanning operation (lock-out condition, etc.).

Block Diagram of FM IF System IC, U5:



**FM Front End and IF**

The FM front end consists of two dual gate FETs and a local oscillator and its buffer. The first FET is used as a FM RF amplifier and the second as a Mixer amplifier. Each gate of the mixer is connected to the RF amplifier output and a local signal injection circuit, respectively. The mixed and resultant IF signals are then led to the IF amplifiers consisting of Q5, U4 and U5. The U5 is a multi-function IF system IC including, three stages of limiter/amplifier, FM quadrature detector, meter driver, audio mute signal drive, etc. For further detail of the IC refer to the block diagram shown below.

The detected audio outputs (mono or stereo composite signals) are developed at pin 6 of U5 and applied to the pin 2 of MPX decoder IC. The decoded left and right channel outputs are obtained at pin 6 and 7 of the decoder IC and led to the Tuner Out jacks through low pass filters and one stage of audio amplifier.

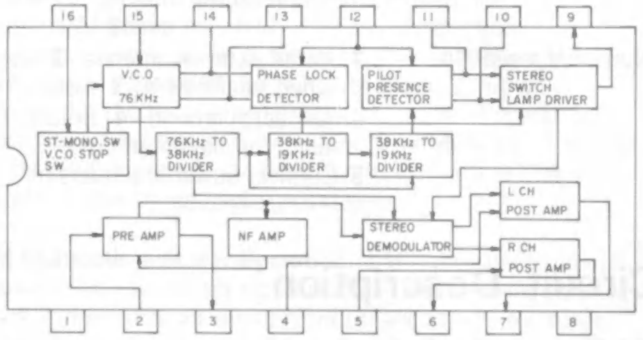
### MPX Stereo Demodulation

The stereo decoder IC U9 operates as a stereo decoder when it pin 16 is applied by a voltage lower than 1.4V. First inverter output (pin 6 of U8), which develops a high output with increased antenna signal input, is connected to the transistor base of Q18 and makes the Q18 conductive when the FM antenna input signal level is increased, then the pin 16 of U9 is grounded through the emitter-collector of Q18 and STEREO/MONO switch, resulting in stereo mode of operation or a high voltage during mono mode operation, and these voltages are utilized to make the stereo/mono lamps turn on or off.

When FM antenna signals higher than the stereo threshold level is applied to the antenna circuit, the pin 4 of U8 becomes low, and this makes Q13 conductive (this is a common circuit for stereo & mono LEDs.).

On the other hand if the U5 operate in stereo mode of operation, the pin 9 develops a low output, then the stereo LED will turn on. However, if the pin 9 develops a high output, the transistor Q22, the base of which is connected to the pin 9, is turned on, the cathode side of the mono LED is grounded through collector-emitter path of Q22, thus the mono LED is turned on.

Block Diagram of MPX Stereo Decoder IC:



### Signal Meter

The FM system IC U5 develops a meter drive voltage at its pin 13 and it is led to the pin 2 of IC U10 (meter amplifier/driver) through the MULTIPASS/METER switch. The U10 amplifies the signal and drives each meter LED connected to its appropriate pin terminals 9 through 13, depending on the signal strength being received.

For AM operation, AM meter drive signal is also connected to the same input pin terminal of No. 2 of IC U10.

### Muting Operation

**1. FM Muting**

The pin 12 of FM IF system IC develops a positive voltage in the event of a low IF input signal level to drive the muting circuit. The positive voltage is first applied to the first inverter pin 7 of IC U8 and the output is obtained at the second inverter pin 4 (since the first and second inverter is connected in serial, the second inverter output is in phase with the first inverter input). The output is then connected to the pin 21 of the controller IC U1. The U1 is designed to develop a logic high voltage at its pin 3 when the pin 21 is applied by a logic high voltage. Since the pin 3 is connected to the base of first muting stage of Q19 through the AUTO/MANUAL switch, the Q19 is turned on in the event of low IF input, and this makes all transistors Q43, Q44, Q45 and Q46 conductive to the ground, thereby muting out the audio signals.

**2. Muting During Scanning Operation**

During scanning operation, the muting circuit is also actuated to eliminate undesirable noises caused by scanning operation, since the controller IC U1 also develops the high level voltage at its pin 3 in addition to the lock-out amplifier output previously stated. And the FM circuit will be muted as described just above.

On the other hand, in the AM circuit the base of Q6 is supplied from the pin 3 of U1 (logic high) and becomes conductive, thereby shorting out the detector output.

### Scan Stop Operation

To secure good scan stop accuracy, the scan stop drive signal must have a narrow, sharp characteristic with its center coincided with that of IF bandwidth. This will be accomplished as follows:

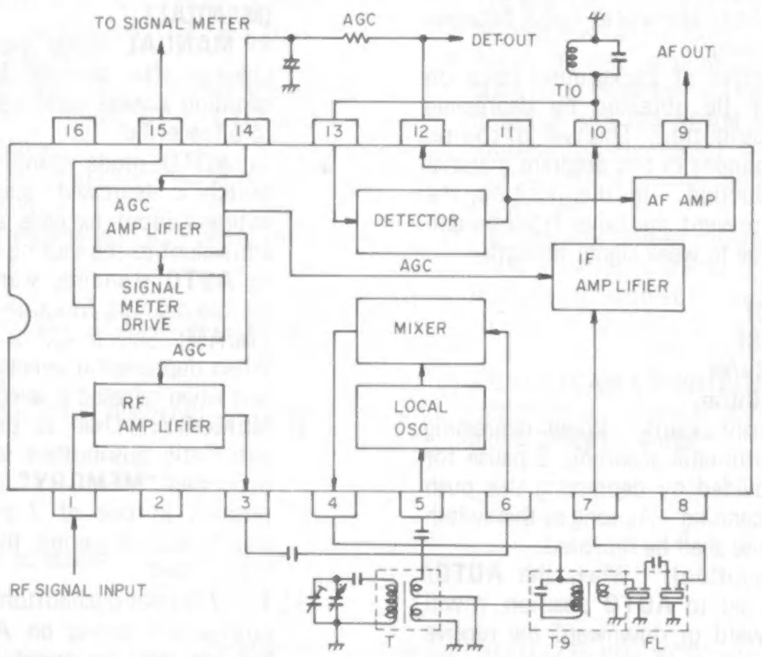
As already described, during scanning operation, pin 3 of U1 develops a high voltage, and this is applied to the base of Q26 and makes it conductive, then the FET Q32 is cut off and the resistor connected across the FET is directly connected to R57 in series. The increased resistance makes final IF bandwidth narrow.

In case of AM operation, a fraction of IF output signal is obtained and further amplified by a narrow band additional IF amplifier consisting of amplifiers provided between pin 9 and 10 and pin 11 & 12 of U8. The amplified output is rectified by diodes D17 and D18 and the output is led to the inverter provided between the pin 14 and 15 of the same IC. A transistor Q12 also operates as an inverter, the collector of which is connected to the last inverter provided between pin 3 and 2. The output developed at the pin 2 will operate in the same way as that of pin 4 in case of FM operation.

### AM Tuner Circuit

Most of the AM tuner circuit are integrated in one monolithic IC U7 consisting of a RF amplifier, local oscillator, mixer, detector, meter driver, etc. For detailed information refer to the block diagram shown below. Incoming antenna signals are applied to the pin 1 of U7 and the final detected audio output is obtained at pin 12, and the amplified audio output is developed at pin 9. The pin 9 output is split into two and applied to each left and right channel LPF filter circuits in the FM MPX stereo circuits through R149 and R150. Transistor Q17, the colector of which is connected to the AM audio signal line, is also one of muting circuits.

Block Diagram of AM Tuner IC:



## Service Information

### Alignment Procedure

**1. Measurement condition**

1) Reference temperature: 25°C
2) Reference humidity: 65%
NOTE: Unless otherwise specified, adjustment may be conducted under the room temperature of 5 – 35°C and the room humidity of 45 – 85%.
3) Power supply
Voltage: AC 220V ± 1%,
Frequency: 50 Hz ± 2%,
THD: less than 2%.

**2. Test equipment**

Any test equipment to be used in this alignment should have its known accuracy and capability to operate within a range of specified tolerance described in the electrical specifications. All test equipments to be used should be properly calibrated.

1) FM signal generator: 30 – 200 MHz
2) FM MPX stereo modulator
3) Audio signal generator: 20 – 20 kHz
4) Audio analyzer (Distortion meter)
5) Audio level meter or VTVM: 0.5 mV – 10V
6) Frequency counter: 200 MHz, high input impedance type
7) Oscilloscope: 1 mV/cm or higher
8) Center meter or Null meter
9) DC voltmeter: High input impedance type
10) FM dummy antenna

**3. Operation and standard setting**

**3.1 Operation of controls and switches**

a) **POWER** (power switch): This switch makes the secondary of the power transformer open or close. In the off mode the back-up current is available for the memory, which is indicated by LED indicator. When the power plug is taken off the AC outlet, the memory will be erased after 24 hours.

b) **MULTIPATH** (multipath switch): This switch is used to indicate the multipath distortion by the LED meter by depressing the switch. The FM antenna should be adjusted to achieve the minimum distortion. By releasing this switch the LED meter on front panel serves for normal signal strength indication.

c) **MPX-FIL** (multiplex filter): When depressed this pushbutton activates a circuit which reduces high frequency noise in weak FM stereo reception. This filter does not affect frequency response but reduces slightly the high frequency stereo separation.

d) **STEREO/MONO** (mode switch): Determines the manner in which a received station will be reproduced by tuner.

**STEREO** (released): Provides stereophonic reception of any stereo broadcast. This pushbutton also provides automatic FM stereo reception.

**MONO** (depressed): The left and right channel signals detected from FM broadcast are mixed and reproduced through both channels.

e) **SCAN LOW/HIGH**

**LOW:** Releasing of this pushbutton will introduce a special muting circuit which eliminates noise between stations on FM when scanning.

**HIGH:** Maximum reduction of background noise on weak stereo stations will be obtained by depressing the **SCAN LOW/HIGH** pushbutton. This will, of course, put high frequency component in the program material in a monophonic reproduction. In this position, the mute is switched off to prevent the tuner from switching to a mute condition due to weak signal strength.

San stop level is as shown:

**FM** **LOW: 20 ± 4 dBf**
**HIGH: 38 ± 3 dBf**
**AM** **LOW: 57 ± 2 dBu/m**
**HIGH: 67 ± 3 dBu/m**

f) **STH** (short-time-hold pushbutton): When depressing the **UP** or **DOWN** for automatic scanning, a pause for 5 seconds should be provided by depressing this push switch before resuming scanning. As long as this switch is depressed 5 seconds pause shall be repeated.

g) **UP/DOWN** (tuning pushbutton): When the **AUTO/MANUAL** pushbutton is set to **AUTO** position, it will start scanning either upward or downward the receive frequency.

When the **AUTO/MANUAL** pushbutton is set to **MANUAL** position, at each time of depressing either of the pushbuttons the receive frequency will be tuned to the next available station assignment by 50 kHz (U.S.A. 200 kHz) spacing for FM and 9 kHz (U.S.A. 10 kHz) spacing for AM.

Keep depressing either of pushbuttons more than 1 second, receive frequency varies serially, and stop when release the pushbutton.

h) **AUTO/MANUAL** (tuning mode pushbutton): Determines the mode of electronic tuning – automatic scanning **(AUTO)** or manual one-by-one tuning **(MANUAL)**.

In **MANUAL** mode the receive frequency is selected channel after channel by **UP** or **DOWN** pushbutton, enabling a weak antenna input below the muting level to be received.

In AUTO mode scanning starts when **UP** or **DOWN** switch is depressed, scanning halts where the level of antenna input exceeds a certain value which is nearly equivalent to the muting level.

In **AUTO** scanning, scanning function prevails, defeating the memory function.

i) **FM/AM:** Selects AM or automatic FM stereo reception. When depressed it selects automatic FM stereo reception and when released it selects AM reception.

j) **MEMORY:** Used to preset AM and FM stations for automatic pushbutton selection. When this switch is depressed **"MEMORY"** is indicated for 5 seconds. By pushing in one of 7 memory preset buttons during this 5 second period the frequency on the display is memorized.

k) **1 – 7** (preset pushbutton): Used for automatic memory pushbutton tuning on AM and FM. Each of 7 pushbuttons may be preset for both AM and FM stations individually.

l) **HOLD:** Used to stop scanning at the desired frequency while scanning automatically.

**4. Memory back-up check:** Confirm 8V at emitter of Q-25 for the back-up current while the AC power source is off. Use a low resistance tester or connect approximate 5 kOhm resistor between ± terminals when confirming the back-up current.

## 5. FM alignment

### 5.1 Receive frequency preset

Preset the following frequencies to memory before starting all alignment procedures:

(1) 87.5 MHz
(2) 90.0 MHz
(3) 98.0 MHz
(4) 106.0 MHz
(5) 108.0 MHz
(6) 108.0 MHz

1) To preset memory

a) Frequency indicator reads either 87.5 MHz or 108.0 MHz when turning power on. Push memory preset switch from 1 – 7.

b) Keep depressing either **UP** or **DOWN** in **MANUAL** mode.

As the frequency approaches to the designated frequency, temporarily release the button. Then press it step by step to tune exactly to the frequency, where **MEMORY** button should be pushed before pushing one of the 7 buttons.

c) Check the frequencies above have been preset correctly on each pushbutton.

### 5.2 PLL local oscillator circuit alignment

5.2.1 Reference frequency adjustment

1) Connect frequency counter to TP-3.
2) Adjust **CT-7** for **11.5200 MHz ± 100 Hz**.

5.2.2 Vari-cap control voltage adjustment

1) Connect voltmeter between TP-4 and GND.
2) Depress preset-button 5 or 6 (108.0 MHz), adjust **CT-4** for **9.6V**.
3) Depress preset-button 1 (87.5 MHz), adjust **T-4** for **3.4V**.
4) Depress preset-button 5 or 6 (108.0 MHz), adjust **CT-4** for **10.0V**.
5) Depress preset-button 1 (87.5 MHz), adjust **T-4** for **3.4V**.
6) Repeat steps 4) and 5) until **10.0V ± 0.1V** is obtained at 108.0 MHz and **3.4V ± 0.2V** at 87.5 MHz.

**NOTE: Use high input impedance Voltmeter.**
**If procedure in step 2) will not provide result as indicated, adjust T-4 first.**

### 5.3 RF IF circuit adjustment

Connect Voltmeter (low impedance type) between TP-1 and TP-2. Output deviation of signal generator should be within ±2 kHz.

5.3.1 IF adjustment

1) Set signal generator to 98.000 MHz, depress preset-button 3 (98.0 MHz). Adjust **T-12** for Voltmeter reading within **±20 mV**.
2) Connect level meter to output terminal, adjust **T-5, T-6** for **maximum** receive sensitivity by reducing the output of the signal generator.

5.3.2 Front End adjustment (Sensitivity adjustment)

1) Set signal generator to 90.000 MHz, depress preset-pushbutton 2 (90.0 MHz). Adjust **T-1, T-2, T-3** alternately for **maximum** scope display.
2) Set signal generator to 106.000 MHz, depress preset-pushbutton 4 (106.0 MHz). Adjust **CT-1, CT-2** and **CT-3** for **maximum** scope display.
3) Repeat steps 1) and 2) until maximum scope display is obtained at both frequencies.
4) Adjust **CT-7** to obtain **maximum** sensitivity if wave form is not symmetrical.

5.3.3 Distortion adjustment

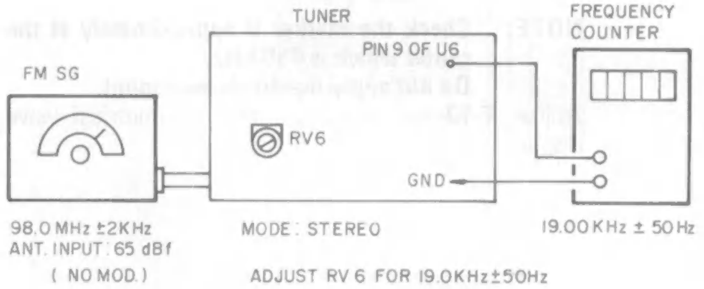
1) Set signal generator to 98.000 MHz, depress preset-button 3 (98.0 MHz).
**Antenna input level: 65 dBf**
2) Adjust T-13 to obtained minimum distortion on THD meter.
3) Check that voltage between **TP-1** and **TP-2** is **within ±20 mV** with no signal condition.

5.3.4 Muting level adjustment

1) Apply 38 dBf level to antenna input. Set the AUTO/MANUAL Selector pushbutton to AUTO (pushbutton released) and the **SCAN HIGH/LOW** selector to **HIGH** (pushbutton depressed).
Rotate RV-1 fully clockwise (RV-1 is located on PSSW213).
2) Depress any one of memory preset pushbuttons, rotate RV-1 counterclockwise until mute is cancelled (when readjusting, depress the preset pushbutton each time).
NOTE: If above procedure is inadequate, rotate RV-1 to a point at which the level turns low to hlgh.
3) Set the **SCAN LOW/HIGH** selector pushbutton to **LOW** (pushbutton released), then check that mute is cancelled at **20 dBf ± 4 dBf**.

### 5.4 MPX circuit adjustment

Connect MPX signal generator to standard signal generator. Test circuit sets up as shown:



5.4.1 19 kHz (76 kHz VCO) adjustment

1) Set **MONO/STEREO** selector pushbutton to **STEREO** (pushbutton released).
2) Set signal generator output to 65 dBf (no modulation).
3) Rotate **RV-6** for frequency reading of **19 kHz ± 50 Hz** at IC U-9 #9 pin, then fix RV-6.

5.4.2 Separation adjustment

1) Apply 65 dBf MPX signal to antenna input.
Rotate **RV-5** for minimum reading on **right channel** Voltmeter.
2) Apply 65 dBf MPX signal generator output level modulated with 1 kHz **right channel** signal to antenna input. Check for minimum reading on **left channel** Voltmeter.
3) If leakage on each channel is not equal, rotate RV-7 to a point at which provides equal leakage on both channels.

5.4.3 Stereo level check

1) Feed signal generator modulated with standard stereo signal by MPX signal generator to antenna terminal.
2) Check that stereo indicator lights up at antenna input level between 16 dBf and 24 dBf.

5.4.4 Signal indicator adjustment

1) Apply 60 dBf signal to antenna input.
Adjust **RV-5** so that all of 5 indicator dots light up.
2) Apply 20 dBf to antenna input. Check that the 1st dot lights up.
3) Check that no dot lights up with no antenna input.

5.4.5 Multipath indicator check

1) Apply 45 dBf signal AM modulated 50! . Depress MUTIPATH button.
2) Check 4 dots of indicator light up.
3) No dot should light up or only 1st dot may light up when readjusting signal generator to FM mode modulated with 40 kHz deviation.

## 6. AM alignment

### 6.1 Receive frequency preset

Preset the following frequencies to memory before initiating adjustments:

(1) 531 kHz
(2) 603 kHz
(3) 999 kHz
(4) 1404 kHz
(5) 1602 kHz

### 6.2 PLL local oscillator circuit

6.2.1 Vari-cap control voltage adjustment

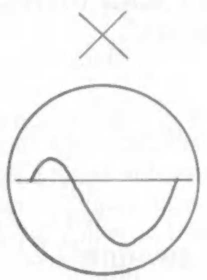
1) Connect Voltmeter between TP-4 and GND.
2) Depress preset-button 5 (1602 kHz), adjust **CT-6** for **9.2V**.
3) Depress preset-button 1 (531 kHz), adjust **T-8** for **1.6V**.
4) Repeat steps 2) and 3) until **1.6V ± 0.05V** is obtained at 531 kHz and **9.2V ± 0.1V** at 1602 kHz.

**NOTE: Use high input impedance Voltmeter.**
**If procedure in step 2) will not provide result indicated, adjust T-8 previously.**

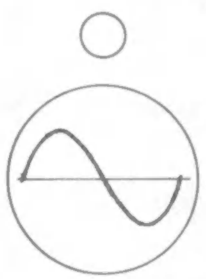
### 6.3 IF adjustment

Use procedure (A) or (B).

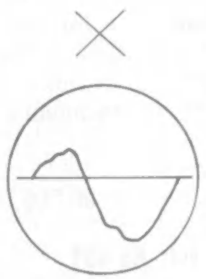
(A) Connect IF sweep input to output jacks. Connect IF sweep to AM antenna terminal.
Adjust **T-9** for "correct" wave form as shown.



(non-linear)

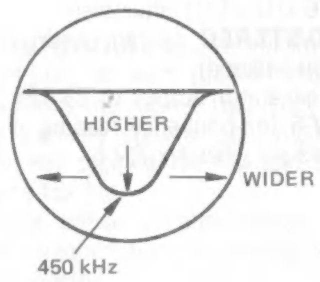


(correct)



(unsymmetrical)

(B) Connect IF sweep input to IC U-7 #12 pin.
Connect IF sweep output to AM antenna terminal.
Adjust **T-9** for higher and wider wave form on display.



**NOTE: Check the marker is approximately at the center which is 450 kHz.**
**Do not apply overloads level input.**
Adjust **T-10** for maximum and symmetrical wave display.

### 6.4 Sensitivity adjustment

1) Pull out bar antenna away from rear panel.
2) Connect test loop antenna to signal generator and locate the loop antenna 20 – 30 cm from bar antenna. Connect VTVM or level meter and oscilloscope to tuner output.
3) Adjust signal generator to 603 kHz, 1 kHz modulated 30%, depress preset-button 2 (603 kHz). Rotate core in bar antenna for maximum sensitivity.
4) Adjust signal generator to 1404 kHz, depress preset-button 4 (1404 kHz).
Adjust CT-5 for maximum sensitivity.
5) Repeat steps 3), 4) until maximum sensitivity is obtained at both 603 kHz and 1404 kHz.
6) Check that the sensitivity is within the specifications at 999 kHz, and the output level is ±3 dB.

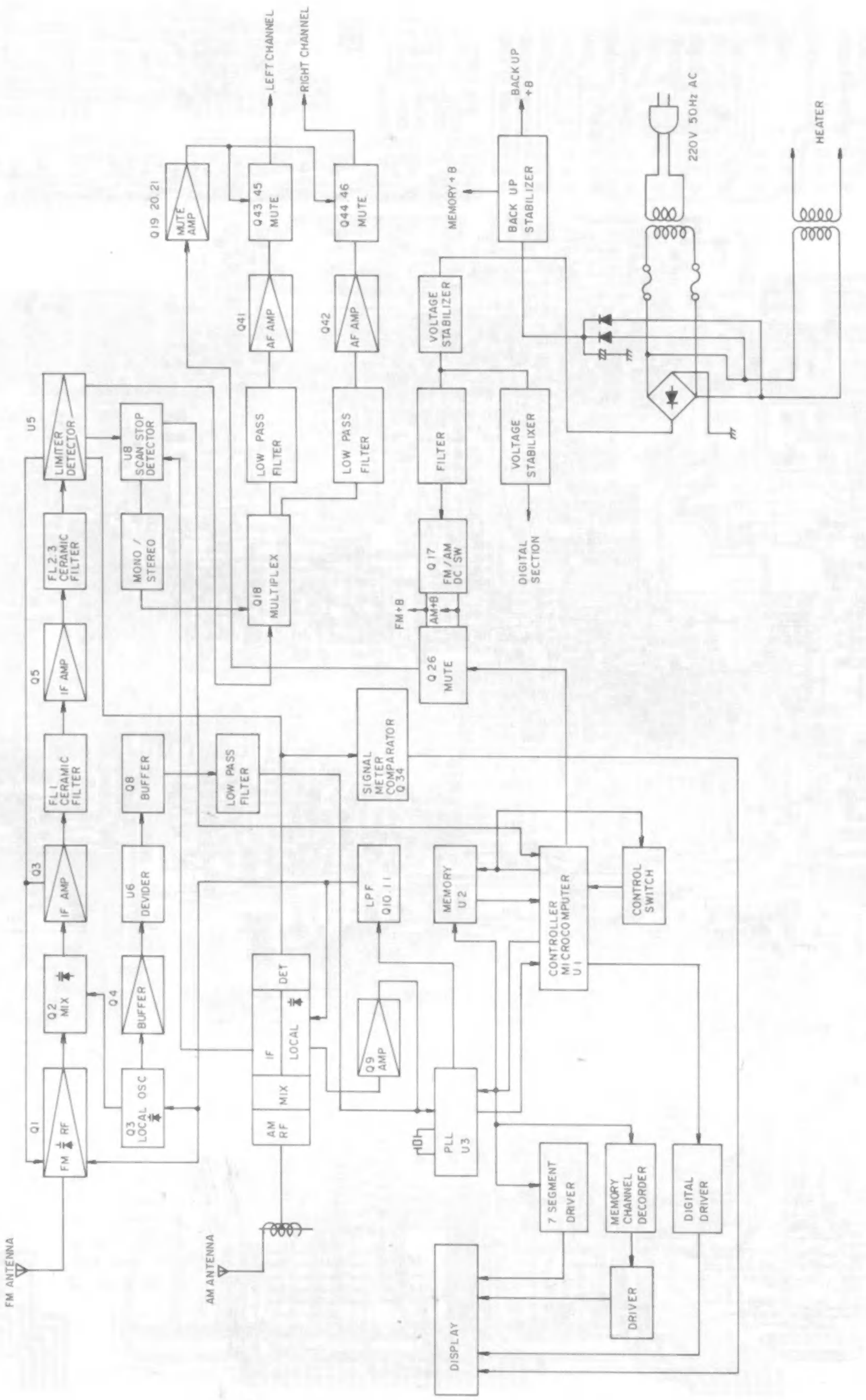
### 6.5 Signal meter adjustment

Increase signal generator output to 80 dBu. Adjust RV-2 so that all of 5 indicator dots light up (use 200 pF antenna).

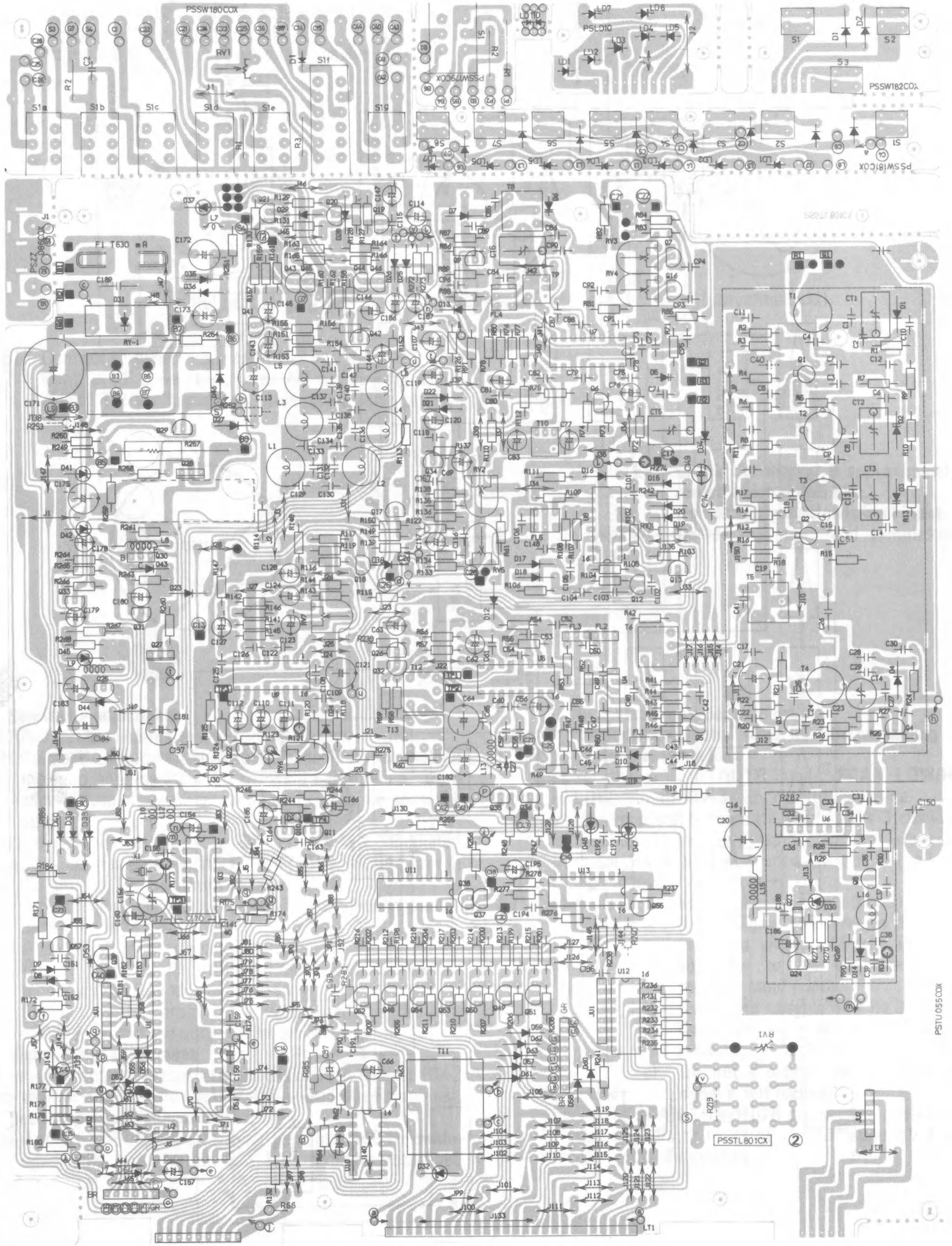
### 6.6 Scan-stop circuit adjustment

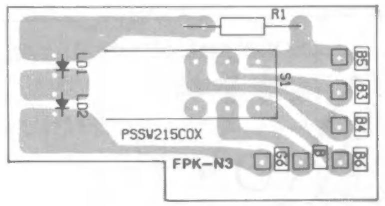
1) Apply 57 dBu* 999 kHz signal generator **400 Hz modulated 30%** output from test loop antenna positioned 60 cm from unit bar antenna.
*** = Signal generator scale 83 dBu containing 26 dBu loop antenna loss.**
2) Set the unit to **AUTO** mode, **SCAN LOW/HIGH** to **LOW**. Rotate **RV-3** fully counterclockwise.
3) Depress preset-button, then rotate **RV-3** clockwise unitl the level is increased rapidly to clear wave form (or rotate **RV-3** clockwise until level of U-1 #3 pin turns high to low).
4) If readjustment is necessary, repeat step 3).
**NOTE: a) Adjust signal generator to 999 kHz. The tolerance within ±50 kHz is only acceptable due to the very narrow scan-stop detector band width.**
**b) Be sure to observe 400 Hz 30% modulated condition as modulation frequency and modulation ratio affect scan-stop level.**
**c) Do not short-cut step 3) since scan stop signal is self-locked.**
5) Set the **SCAN LOW/HIGH** pushbutton to **HIGH**. Adjust signal generator to 67 dBu, then rotate **RV-4** clockwise until mute is cancelled.

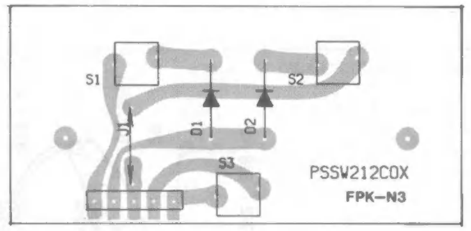
## Block Diagram

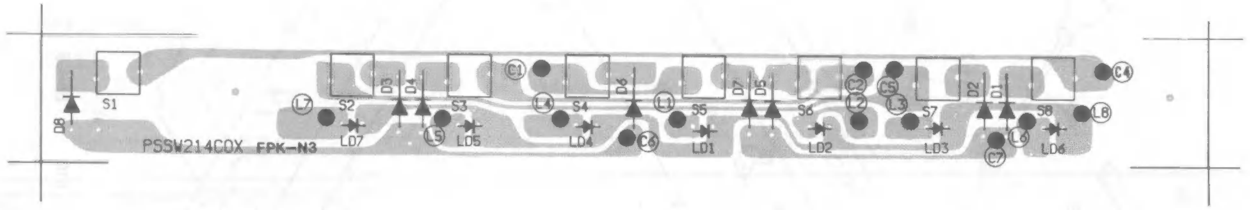


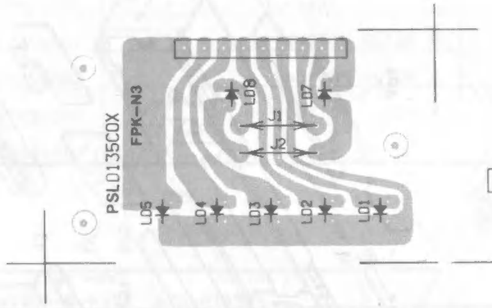
# PC Board Layout

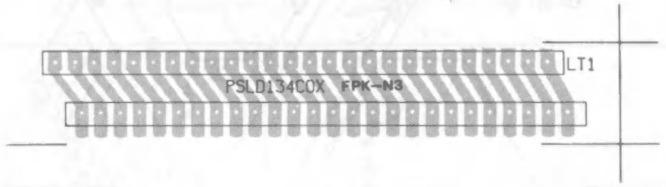


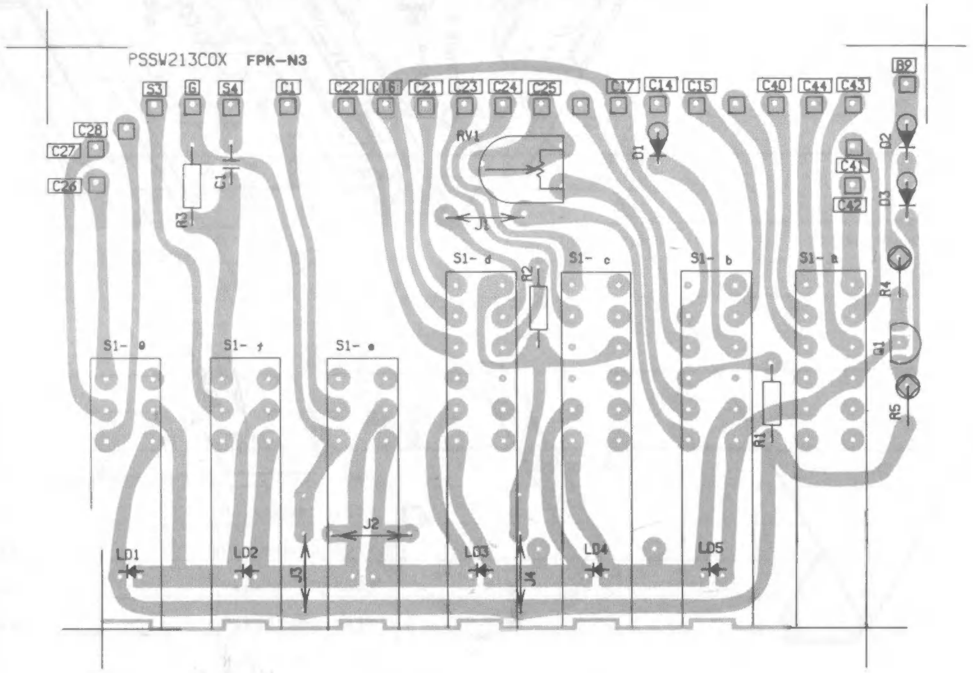




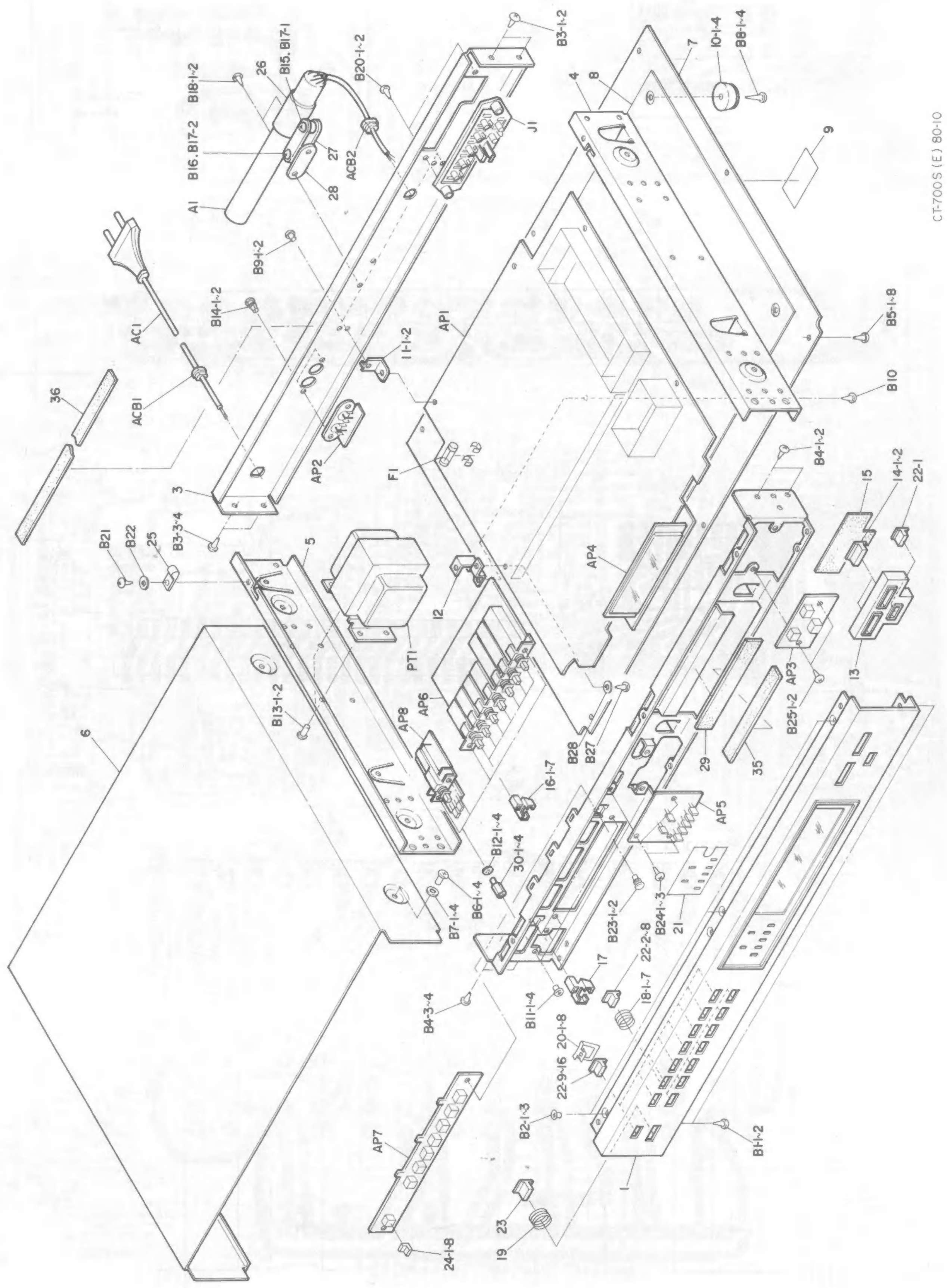








# Exploded View



CT-700S (E) 80-10

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | MECH. ELEMENTS | TAA39ASMCL2 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | VX222SW001 | | ADAPTER BUTT A | | 16-1 | 16-2 | 16-3 | 16-4 | 7 |
| 2 | | | | | | 16-5 | 16-6 | 16-7 | | |
| 3 | | VX222SW002 | | ADAPTER BUTT C | | 17 | | | | 1 |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | ACCESSORIES | TAA35AUCAL5 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | ACSP001GEA | | ST. AUDIO CABLE | | | | | | 1 |
| 2 | | ZAT0015002 | | ANTENNA | | | | | | 1 |
| 3 | | KPCT700E01 | | INNER CARTON | [PACKING MATTER] | | | | | 1 |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | ESCUTCHEON ASSY | AMCT700*01 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | ME95EAA013 | | ESCUTCHEON | | 1-A | | | | 1 |
| 2 | | VF174SX002 | | FRAME | | 1-B | | | | 1 |
| 3 | | VK172SB001 | | BUTTON GUIDE F | | 1-F | | | | 1 |
| 4 | | VK222SB003 | | BUTTON GUIDE C | | 1-E | | | | 1 |
| 5 | | VK272SB002 | | BUTTON GUIDE A | | 1-D | | | | 1 |
| 6 | | VS747AS003 | | PLATE A | | 1-C | | | | 1 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSLD135AA |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | MW401CX001 | | SHORT JUMPER | JW-10 | | | | | 2 |
| 2 | | PSLD135COX | | PRINTED W.BOARD | | | | | | 1 |
| 3 | | QLBLN224RN | | L.E.D | LN224RP RED | LD7 | | | | 1 |
| 4 | | QLBLN324GN | | L.E.D | LN324GP GREEN | LD1 | LD2 | LD3 | LD4 | 6 |
| 5 | | | | | | LD5 | LD8 | | | |
| 6 | | WP09060DGT | | PC-JOINT | | | | | | 1 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSLD134AA |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | PSLD134COX | | PRINTED W.BOARD | | | | | | 1 |
| 2 | | ZLF1P7D8XA | | F.L. INDICATOR | | | | | | 1 |
| 3 | | ZZZ0000035 | | PC. JOINT | | | | | | 1/ 2 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSCT70011 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXPLODED | APSLD134AA | | P.W.BOARD ASSY | | | | | | 1 |
| 2 | EXPLODED | APSLD135AA | | P.W.BOARD ASSY | | | | | | 1 |
| 3 | EXPLODED | APSSW212AA | | P.W.BOARD ASSY | | | | | | 1 |
| 4 | EXPLODED | APSSW213AA | | P.W.BOARD ASSY | | | | | | 1 |
| 5 | EXPLODED | APSSW214AA | | P.W.BOARD ASSY | | | | | | 1 |
| 6 | EXPLODED | APSSW215AA | | P.W.BOARD ASSY | | | | | | 1 |

# Replacement Parts List

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | ELEC. ELEMENTS | TAA39ASMCL1 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | ACAC035EEA | | AC CORD ASSY | | AC1 | | | | 1 |
| 2 | EXPLODED | APSCT70011 | | P.W.BOARD ASSY | | | | | | 1 |
| 3 | EXPLODED | APSSTL8014 | | P.W.BOARD ASSY | | | | | | 1 |
| 4 | | CKDB473ZFM | | CERAMIC CAP. | 0.047MFD 50V -20, +20% F | C1 | | | | 1 |
| 5 | | GCT700*A01 | | P.W.BOARD | | | | | | 1 |
| 6 | | LF151KA01T | | R.F.C. | | L1 | | | | 1 |
| 7 | | TEAR120E04 | | BAR ANTENNA | | A1 | | | | 1 |
| 8 | | TPJ48S008Y | | PWR TRANSFORMER | | PT1 | | | | 1 |
| 9 | | TV750301A2 | | BALANCE COIL | | BA1 | | | | 1 |
| 10 | | VM270NB004 | | BUSHING | | ACB1 | ACB2 | | | 2 |
| 11 | | YTD05D001U | | TERMINAL | | J1 | | | | 1 |
| 12 | | ZFBQ63101A | | FUSE | | F1 | | | | 1 |
| 13 | | ZZZ0000154 | | SOLDERLESS CONN | | ZZ1 | ZZ2 | | | 2 |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | MECH. ELEMENTS | TAA39ASMCL2 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXPLODED | AMCT700*01 | | ESCUTCHEON ASSY | | 1 | | | | 1 |
| 2 | | BNHCL30NBN | | NUT | M3, BS-NI, THIN-TYPE | B17-1 | B17-2 | | | 2 |
| 3 | | BRP3045QNB | | PAN HEAD RIVET | | B23-1 | B23-2 | | | 2 |
| 4 | | BRP3055QNB | | PAN HEAD RIVET | 3MX5.5 | B14-1 | B14-2 | | | 2 |
| 5 | | BSPB3006NB | | BIND HEAD SCREW | (+)BIT, M3 X 6 S-BLACK | B9-1 | B9-2 | | | 2 |
| 6 | | BSPC3006NZ | | CEMS SCREW | (+)BIT, M3 X 6 S-ZNCR | B11-1 | B11-2 | B11-3 | B11-4 | 4 |
| 7 | | BSPP3020NB | | PAN HEAD SCREW | (+)BIT, M3 X 20 S-BLACK | B16 | | | | 1 |
| 8 | | BSPP3020NP | | PAN HEAD SCREW | (+)BIT, M3 X 20 PLASTIC | B15 | | | | 1 |
| 9 | | BTPB5010TN | | BIND TAP SCREW | | B6-1 | B6-2 | B6-3 | B6-4 | 4 |
| 10 | | BTPL3008BB | | NAIL TAP SCREW | (+)BIT, M3 X 8 S-BLACK | B3-1 | B3-2 | B3-3 | B3-4 | 4 |
| 11 | | BTPP3008TZ | | PAN TAP SCREW | (+)BIT, M3 X 8 S-ZNCR (TAP TITE) | B13-1 | B13-2 | B8-1 | B8-2 | 6 |
| 12 | | | | | | B8-3 | B8-4 | | | |
| 13 | | BTPS3006TZ | | FLAT TAP SCREW | (+)BIT, M3 X 6 S-ZNCR (TAP TITE) | B2-1 | B2-2 | B2-3 | | 3 |
| 14 | | BTPW3008AB | | BRAS TAP SCREW | | B20-1 | B20-2 | | | 2 |
| 15 | | BTPW3008BB | | BRAS. TAP SCREW | (+)BIT, M3 X 8 S-BLACK | B18-1 | B18-2 | | | 2 |
| 16 | | BTPW3008BZ | | BRAS. TAP SCREW | (+)BIT, M3 X 8 S-ZNCR | B1-1 | B1-2 | B10 | B21 | 21 |
| 17 | | | | | | B24-1 | B24-2 | B24-3 | B25-1 | |
| 18 | | | | | | B25-2 | B4-1 | B4-2 | B4-3 | |
| 19 | | | | | | B4-4 | B5-1 | B5-2 | B5-3 | |
| 20 | | | | | | B5-4 | B5-5 | B5-6 | B5-7 | |
| 21 | | | | | | B5-8 | | | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | MECH. ELEMENTS | TAA39ASMCL2 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | BTPX3008BZ | | I.T BT SCREW | (+)BIT, M3 X 8 S-ZNCR | B26-1 | B26-2 | B26-3 | B26-4 | 7 |
| 2 | | | | | | B26-5 | B26-6 | B26-7 | | |
| 3 | | BWG30655SW | | OT. LOCK WASHER | OUTSIDE TOOTHED, 3M/M S-ZN | B12-1 | B12-2 | B12-3 | B12-4 | 4 |
| 4 | | BWM30A08SN | | FLAT L. WASHER | FLAT LARGE, 3 M/M S-NI | B22 | | | | 1 |
| 5 | | BWM3080AFR | | FLAT L. WASHER | FLAT LARGE, 3 M/M RED-FIBER | B28 | | | | 1 |
| 6 | | BWM50C08SN | | FLAT L. WASHER | FLAT LARGE, 5 M/M S-NI | B7-1 | B7-2 | B7-3 | B7-4 | 4 |
| 7 | | MB942SK006 | | REAR PANEL | | 3 | | | | 1 |
| 8 | | MB943SX008 | | FRONT PANEL | | 2 | | | | 1 |
| 9 | | MF422PB001 | | HOLDER | | 28 | | | | 1 |
| 10 | | MH632PB001 | | HOLDER | | 27 | | | | 1 |
| 11 | | ML122SX003 | | PCB BRACKET A | | 11-1 | 11-2 | | | 2 |
| 12 | | ML221LD003 | | SPRING F | | 20-1 | 20-2 | 20-3 | 20-4 | 8 |
| 13 | | | | | | 20-5 | 20-6 | 20-7 | 20-8 | |
| 14 | | MM480PB001 | | HOLDER | | 26 | | | | 1 |
| 15 | | MS986SX012 | | BOTTOM PLATE | | 7 | | | | 1 |
| 16 | | MT263BD010 | | SPACER SW | | 30-1 | 30-2 | 30-3 | 30-4 | 4 |
| 17 | | MU841SX001 | | SIDE BRACKET L | | 5 | | | | 1 |
| 18 | | MU841SX002 | | SIDE BRACKET R | | 4 | | | | 1 |
| 19 | | MU895SM005 | | COVER | | 6 | | | | 1 |
| 20 | | MW271LY004 | | SPRING A | | 18-1 | 18-2 | 18-3 | 18-4 | 7 |
| 21 | | | | | | 18-5 | 18-6 | 18-7 | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | MECH. ELEMENTS | TAA39ASMCL2 |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | MW271LY005 | | SPRING C | | 19 | | | | 1 |
| 2 | | MZ232SX004 | | PCB. BRACKET B | | 12 | | | | 1 |
| 3 | | VK111SB002 | | ADAPTER SW | | 24-1 | 24-2 | 24-3 | 24-4 | 8 |
| 4 | | | | | | 24-5 | 24-6 | 24-7 | 24-8 | |
| 5 | | VK264SB003 | | BUTTON GUIDE B | | 13 | | | | 1 |
| 6 | | VM183SB002 | | FOOT | | 10-1 | 10-2 | 10-3 | 10-4 | 4 |
| 7 | | VN220AX001 | | BUTTON A | | 22-1 | 22-10 | 22-11 | 22-12 | 16 |
| 8 | | | | | | 22-13 | 22-14 | 22-15 | 22-16 | |
| 9 | | | | | | 22-2 | 22-3 | 22-4 | 22-5 | |
| 10 | | | | | | 22-6 | 22-7 | 22-8 | 22-9 | |
| 11 | | VN220AX002 | | BUTTON B | | 14-1 | 14-2 | | | 2 |
| 12 | | VN220AX003 | | BUTTON C | | 23 | | | | 1 |
| 13 | | VS229RB001 | | PAD BOTTOM | | 37 | | | | 1 |
| 14 | | VS417NN003 | | CLAMPER. | | 25 | | | | 1 |
| 15 | | VS435CN002 | | LED GUIDE | | 21 | | | | 1 |
| 16 | | VS614FF001 | | FIBER FL | | 35 | | | | 1 |
| 17 | | VS617RF001 | | SPONGE FL | | 29 | | | | 1 |
| 18 | | VS646RW001 | | SPONGE TUNING | | 15 | | | | 1 |
| 19 | | VS884SB004 | | BOTTOM SHEET | | 8 | | | | 1 |
| 20 | | VS918RF001 | | SPONGE SPACER | | 36 | | | | 1 |
| 21 | | VVSCT700E1 | | SER.NO.PLATE | | 9 | | | | 1 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSSW212AA |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | MW401CX003 | | SHORT JUMPER | | | | | | 1 |
| 2 | | PSCT7001CX | | PRINTED W.BOARD | | | | | | 1 |
| 3 | | PSSW212COX | | P.W BORD | | | | | | 1 |
| 4 | | QDSMA150XN | | SILICON DIODE | MA150 VF=1.2V,VR=35V NO-RANK 24MIN | D1 | D2 | | | 2 |
| 5 | | SP01ABX44A | | PUSH SWITCH | | S1 | S2 | S3 | | 3 |
| 6 | | ZZZ0000035 | | PC. JOINT | | | | | | 1/ 12 |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSSW213AA |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | CCMB332KEH | | MYLAR CAPACITOR | 3300PF 50V -10, +10% | C1 | | | | 1 |
| 2 | | MW201BS001 | | TERMINAL | | | | | | 22 |
| 3 | | MW401CX001 | | SHORT JUMPER | JW-10 | | | | | 4 |
| 4 | | PSSW213COX | | P.W BORD | | | | | | 1 |
| 5 | | QDSMA150XN | | SILICON DIODE | MA150 VF=1.2V,VR=35V NO-RANK 24MIN | D1 | D2 | D3 | | 3 |
| 6 | | QLBLN317GN | | L.E.D. | LN317GP GREEN | LD1 | LD2 | LD3 | LD4 | 5 |
| 7 | | | | | | LD5 | | | | |
| 8 | | QTA0684XAN | | TRANSISTOR | 2SA683 Q,R-RANK | Q1 | | | | 1 |
| 9 | | RD25TJ105X | | CARBON FILM R. | 0.25W 1M OHM 5% | R3 | | | | 1 |
| 10 | | RD25TJ432X | | CARBON FILM R. | 0.25W [illegible].3K OHM 5% | R1 | R2 | | | 2 |
| 11 | | RD25TJ512X | | CARBON FILM R. | 0.25W 5.1K OHM 5% | R5 | | | | 1 |
| 12 | | RD25VJ560X | | CARBON FILM R. | 0.25W 56 OHM 5% | R4 | | | | 1 |
| 13 | | RPGNB50201 | | SEMI-FIXED VR. | 5K OHM B-CURVE | RV1 | | | | 1 |
| 14 | | SP07CAX04A | | PUSH SWITCH | | S1 | | | | 1 |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSSW214AA |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | ACCN303ULA | | CONN CORD ASSY | | | | | | 1 |
| 2 | | ACCN413ULA | | CONN CORD ASSY | 6P L=200 | | | | | 1 |
| 3 | | PSSW214COX | | P.W.BOARD | | | | | | 1 |
| 4 | | QDSMA150XN | | SILICON DIODE | MA150 VF=1.2V,VR=35V NO-RANK 24MIN | D1 | D2 | D3 | D4 | 8 |
| 5 | | | | | | D5 | D6 | D7 | D8 | |
| 6 | | QLAPG5531R | | L.E.D. | PG5531KY GREEN 2.1V | LD1 | LD2 | LD3 | LD4 | 7 |
| 7 | | | | | | LD5 | LD6 | LD7 | | |
| 8 | | SP01ABX44A | | PUSH SWITCH | | S1 | S2 | S3 | S4 | 8 |
| 9 | | | | | | S5 | S6 | S7 | S8 | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSSW215AA |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | MW201BS001 | | TERMINAL | | | | | | 6 |
| 2 | | PSSW215COX | | P.W.BOARD | | | | | | 1 |
| 3 | | QLBLN417YN | | L.E.D.DIODE | LN417YP ORANGE | LD1 | LD2 | | | 2 |
| 4 | | RG1ARJ152B | | M-OXIDE FILM R. | | R1 | | | | 1 |
| 5 | | SP01AAX46D | | PUSH SWITCH | | S1 | | | | 1 |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | BTPW3008AZ | | BRAS. TAP SCREW | (+)BIT, M3 X 8 S-ZNCR | B1 | | | | 1 |
| 2 | | CCDB040CCM | | CERAMIC CAP. | CH 4PF 50V -0.25, +0.25PF | C29 | | | | 1 |
| 3 | | CCDB060CUM | | CERAMIC CAP. | SL 6PF 50V -0.25, +0.25PF | C51 | | | | 1 |
| 4 | | CCDB070DOM | | CERAMIC CAP. | SL 7PF 50V -0.5, +0.5PF | C1 | | | | 1 |
| 5 | | CCDB100DCM | | CERAMIC CAP. | CH 10PF 50V -0.5, +0.5PF | C23 | C27 | | | 2 |
| 6 | | CCDB100DOM | | CERAMIC CAP. | SL 10PF 50V -0.5, +0.5PF | C31 | | | | 1 |
| 7 | | CCDB120KOM | | CERAMIC CAP. | 12PF 50V -10, +10% SL | C13 | C170 | C8 | | 3 |
| 8 | | CCDB220KOM | | CERAMIC CAP. | 22PF 50V -10, +10% SL | C15 | | | | 1 |
| 9 | | CCDB330KCM | | CERAMIC CAP. | 33PF 50V -10, +10% CH | C24 | | | | 1 |
| 10 | | CCDB330KUM | | CERAMIC CAP. | | C25 | | | | 1 |
| 11 | | CCDB471KOM | | CERAMIC CAP. | 470PF 50V -10, +10% SL | C30 | | | | 1 |
| 12 | | CCDB680KOM | | CERAMIC CAP. | 68PF 50V -10, +10% SL | C38 | | | | 1 |
| 13 | | CCDB820KOM | | CERAMIC CAP. | 82PF 50V -10, +10% SL | C37 | | | | 1 |
| 14 | | CCFB151KOT | | CERAMIC CAP. | 150PF 50V -10, +10% SL | C89 | | | | 1 |
| 15 | | CCFB221KOT | | CERAMIC CAP. | 220PF 50V -10, +10% SL | C163 | | | | 1 |
| 16 | | CCGB101KOT | | CERAMIC CAP. | 100PF 50V -10, +10% SL | C115 | C116 | C118 | C122 | 4 |
| 17 | | CCGB220KOT | | CERAMIC CAP. | 22PF 50V -10, +10% SL | C106 | | | | 1 |
| 18 | | CCGB270KOT | | CERAMIC CAP. | 27PF 50V -10, +10% SL | C50 | | | | 1 |
| 19 | | CCGB330KOT | | CERAMIC CAP. | 33PF 50V -10, +10% SL | C156 | C61 | | | 2 |
| 20 | | CCGB470KOT | | CERAMIC CAP. | 47PF 50V -10, +10% SL | C73 | | | | 1 |
| 21 | | CCGB560KOT | | CERAMIC CAP. | 56PF 50V -10, +10% SL | C41 | C84 | | | 2 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE | |
|---|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD | |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | Q'TY USED |
|---|---|---|---|---|---|---|---|
| 1 | | CEAC221ALX | | ELYT. CAPACITOR | 220MFD 10V | C184 | 1 |
| 2 | | CEAD101ALX | | ELYT. CAPACITOR | 100MFD 16V | C181 | 1 |
| 3 | | CEAD221ALX | | ELYT. CAPACITOR | 220MFD 16V | C113 C121 C175 C182 | 6 |
| 4 | | | | | | C20 C21 | |
| 5 | | CEAD470ALX | | ELYT. CAPACITOR | 47MFD 16V | C97 | 1 |
| 6 | | CEAE100NLX | | ELYT. CAPACITOR | | C149 | 1 |
| 7 | | CEAGR22ZMN | | ELYT. CAPACITOR | 0.22MFD 50V MS | C112 | 1 |
| 8 | | CEAG010ZMN | | ELYT. CAPACITOR | 1MFD 50V MS | C165 | 1 |
| 9 | | CEAG101ALX | | ELYT. CAPACITOR | 100MFD 50V | C172 C173 | 2 |
| 10 | | CEAG102ACN | | ELYT. CAPACITOR | 1000MFD 50V U | C171 | 1 |
| 11 | | CEVC220ALX | | ELYT. CAPACITOR | | C154 C160 C179 | 3 |
| 12 | | CEVC470ALX | | ELYT. CAPACITOR | | C183 | 1 |
| 13 | | CEVD100ALX | | ELYT. CAPACITOR | | C119 C120 C123 C124 | 10 |
| 14 | | | | | | C127 C128 C56 C69 | |
| 15 | | | | | | C76 C77 | |
| 16 | | CEVD101ALX | | ELYT. CAPACITOR | | C64 | 1 |
| 17 | | CEVD470ALX | | ELYT. CAPACITOR | | C166 C185 C83 | 3 |
| 18 | | CEVE3R3ALX | | ELYT. CAPACITOR | | C110 | 1 |
| 19 | | CEVE4R7ALX | | ELYT. CAPACITOR | | C107 C117 C145 C146 | 6 |
| 20 | | | | | | C63 C81 | |
| 21 | | CEVGR47ALX | | ELYT. CAPACITOR | | C158 C178 C180 | 3 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE | |
|---|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD | |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | Q'TY USED |
|---|---|---|---|---|---|---|---|
| 1 | | CEVG010ALX | | ELYT. CAPACITOR | | C111 C114 C143 C144 | 10 |
| 2 | | | | | | C147 C186 C187 C62 | |
| 3 | | | | | | C66 C68 | |
| 4 | | CG2H3R9KPB | | MINIC CAP. | | C26 | 1 |
| 5 | | CKDB102ZFM | | CERAMIC CAP. | 1000PF 50V -20, +80% F | C4 C7 | 2 |
| 6 | | CKDB103ZFM | | CERAMIC CAP. | 0.01MFD 50V -20, +80% F | C10 C11 C12 C14 | 16 |
| 7 | | | | | | C18 C188 C2 C22 | |
| 8 | | | | | | C28 C3 C33 C36 | |
| 9 | | | | | | C39 C40 C6 C9 | |
| 10 | | CKDB152KBM | | CERAMIC CAP. | | C32 | 1 |
| 11 | | CKDB223ZFM | | CERAMIC CAP. | 0.022MFD 50V -20, +20% F | C16 C17 C19 | 3 |
| 12 | | CKDB472ZFM | | CERAMIC CAP. | 4700PF 50V -20, +80% F | C35 C5 | 2 |
| 13 | | CKDB473ZFM | | CERAMIC CAP. | 0.047MFD 50V -20, +20% F | C196 C34 C74 | 3 |
| 14 | | CKDE103PEM | | CERAMIC CAP. | 0.01MFD 500V -0, +100% E | C189 | 1 |
| 15 | | CKFB103ZFT | | CERAMIC CAP. | 0.01MFD 50V -20, +80% F | C105 C148 C155 C42 | 10 |
| 16 | | | | | | C72 C82 C87 C92 | |
| 17 | | | | | | C95 C96 | |
| 18 | | CKFB223ZFT | | CERAMIC CAP. | 0.022MFD 50V -20, +80% F | C101 C102 C150 C151 | 21 |
| 19 | | | | | | C43 C45 C46 C47 | |
| 20 | | | | | | C48 C49 C52 C53 | |
| 21 | | | | | | C54 C55 C71 C75 | |

| EXPLODED ASSEMBLY | PART NAME | PART CODE | |
|---|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD | |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | Q'TY USED |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | C79 C88 C90 C93 | |
| 2 | | | | | | C94 | |
| 3 | | CKFB473ZFM | | CERAMIC CAP. | 0.047MFD 50V -20, +80% F | C98 | 1 |
| 4 | | CKFB473ZFT | | CERAMIC CAP. | 0.047MFD 50V -20, +80% F | C108 C157 C159 C161 | 12 |
| 5 | | | | | | C190 C191 C58 C59 | |
| 6 | | | | | | C60 C65 C85 C91 | |
| 7 | | CKGB472ZFT | | CERAMIC CAP. | 4700PF 50V -20, +80% F | C44 | 1 |
| 8 | | CKGB681KBT | | CERAMIC CAP. | | C141 C142 | 2 |
| 9 | | CQMB102KTH | | MYLAR CAPACITOR | 1000PF 50V -10, +10% | C129 C130 | 2 |
| 10 | | CQMB103KEH | | MYLAR CAPACITOR | 0.01MFD 50V -10, +10% | C78 | 1 |
| 11 | | CQMB122JEH | | MYLAR CAPACITOR | 1200PF 50V -5, +5% | C125 C126 | 2 |
| 12 | | CQMB152KTH | | MYLAR CAPACITOR | | C137 C138 | 2 |
| 13 | | CQMB222KTH | | MYLAR CAPACITOR | 2200PF 50V -10, +10% | C133 C134 | 2 |
| 14 | | CQMB223KTH | | MYLAR CAPACITOR | 0.022MFD 50V -10, +10% | C104 C80 | 2 |
| 15 | | CQMB333KTH | | MYLAR CAPACITOR | 0.033MFD 50V -10, +10% | C164 | 1 |
| 16 | | CQMB563KTH | | MYLAR CAPACITOR | 0.056MFD 50V -10, +10% | C152 | 1 |
| 17 | | CQMB683KEH | | MYLAR CAPACITOR | 0.068MFD 50V -10, +10% | C103 | 1 |
| 18 | | CQSC102JCF | | STYROFLEX CAP. | | C135 C136 | 2 |
| 19 | | CQSC182JCF | | STYROFLEX CAP. | 1800PF 100V -5, +5% | C139 C140 | 2 |
| 20 | | CQSC251JCF | | STYROFLEX CAP. | | C131 C132 | 2 |
| 21 | | CQSC471JCF | | STYROFLEX CAP. | 470PF 100V -5, +5% | C109 C86 | 2 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE | |
|---|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD | |

| ITEM | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | Q'TY USED |
|---|---|---|---|---|---|---|---|
| 1 | | CTX1080P06 | | TRIMMER CAP. | | CT1 CT2 CT3 | 3 |
| 2 | | CTX1150P01 | | TRIMMER CAP. | | CT5 CT6 | 2 |
| 3 | | CTZ6100H01 | | TRIMMER CAP. | | CT4 | 1 |
| 4 | | CTZ6300H02 | | TRIMMER CAP | | CT7 | 1 |
| 5 | | FBR450A01M | | CERAMIC FILTOR | | FL4 FL5 | 2 |
| 6 | | FB10R7F20M | | CERAMIC FILTER | | FL1 FL2 FL3 | 3 |
| 7 | | LCADA3038A | | RF COIL | | L11 L13 L15 L7 | 6 |
| 8 | | | | | | L8 L9 | |
| 9 | | LF151KA01T | | R.F.C. | | L10 L12 | 2 |
| 10 | | LF180JC01K | | RF COIL. | | L16 | 1 |
| 11 | | LF393JC01K | | CHOKE COIL | | L5 L6 | 2 |
| 12 | | LF563JC01K | | RF COIL | | L3 L4 | 2 |
| 13 | | LF683JC01K | | CHOKE COIL | | L1 L2 | 2 |
| 14 | | MB644SX001 | | SHIELD | | SL5 | 1 |
| 15 | | MB763SS001 | | SHEILD.A | | SL1 | 1 |
| 16 | | MS435SS004 | | SHIELD | | SL9 | 1 |
| 17 | | MS635SS002 | | SHEILD.B | | SL2 SL3 | 2 |
| 18 | | MS645SS002 | | SHEILD E | | SL4 SL6 SL7 | 3 |
| 19 | | MS825SS001 | | PLATE | | SL8 | 1 |
| 20 | | MU242AD001 | | HEAT SINK | | HS1 | 1 |
| 21 | | MW2018S001 | | TERMINAL | | | 41 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
|  | P.W.BOARD ASSY | APSTU055DD |

|  | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. |  |  |  | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  | MW401CX001 |  | SHORT JUMPER | JW-10 |  |  |  |  | 6 |
| 2 |  | MW401CX002 |  | SHORT JUMPER |  |  |  |  |  | 2 |
| 3 |  | MW401CX004 |  | SHORT JUMPER | JW-5 |  |  |  |  | 2 |
| 4 |  | MW401CX005 |  | SHORT JAMPER | JW-15 |  |  |  |  | 2 |
| 5 |  | MW401CX006 |  | SHOT JAMPER | 10MM |  |  |  |  | 116 |
| 6 |  | MW401CX008 |  | SHORT JUMPER |  |  |  |  |  | 1 |
| 7 |  | MW401CX012 |  | SHORT JUMPER |  |  |  |  |  | 1 |
| 8 |  | PSSTL801CX |  | PRINTED W.BOARD | PRINTED W. BOARD ONLY |  |  |  |  | 1 |
| 9 |  | PSTU055C0X |  | P.W.BOARD |  |  |  |  |  | 1 |
| 10 |  | QDCBB509CQ |  | VRRICAP.DIODE |  | D5 | D6 |  |  | 2 |
| 11 |  | QDCTT310EQ |  | VARICAP DIODE |  | D1 | D2 | D3 | D4 | 4 |
| 12 |  | QDG1N60XXT |  | GERMANIUM DIODE | 1N60 NO-RANK | D10 | D11 | D65 | D66 | 4 |
| 13 |  | QDSEM1ZXXD |  | SILICON DIODE | EMIZ <SANKEN> | D35 | D36 |  |  | 2 |
| 14 |  | QDSMA150XN |  | SILICON DIODE | MA150 VF=1.2V,VR=35V NO-RANK 24MIN | D12 | D13 | D14 | D15 | 37 |
| 15 |  |  |  |  |  | D16 | D17 | D18 | D19 |  |
| 16 |  |  |  |  |  | D20 | D21 | D22 | D23 |  |
| 17 |  |  |  |  |  | D24 | D25 | D26 | D27 |  |
| 18 |  |  |  |  |  | D28 | D29 | D34 | D38 |  |
| 19 |  |  |  |  |  | D43 | D44 | D51 | D52 |  |
| 20 |  |  |  |  |  | D53 | D55 | D56 | D57 |  |
| 21 |  |  |  |  |  | D58 | D59 | D60 | D61 |  |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
|  | P.W.BOARD ASSY | APSTU055DD |

|  | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO |  |  |  | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  |  |  |  |  | D62 | D63 | D7 | D8 |  |
| 2 |  |  |  |  |  | D9 |  |  |  |  |
| 3 |  | QDSS1RBAXK |  | SI-DIODE | S1RBA | D31 |  |  |  | 1 |
| 4 |  | QDZA1047XN |  | ZENER DIODE | MA1047 VZ=4.4-5.0V NOM.=4.7V | D30 |  |  |  | 1 |
| 5 |  | QDZA1075XN |  | ZENER DIODE | MA1075 VZ=7.0-7.9V NOM.=7.5V | D42 |  |  |  | 1 |
| 6 |  | QDZ150EB3A |  | ZENER DIODE | RD15EB3 VZ=14.35-15.09V | D41 |  |  |  | 1 |
| 7 |  | QDZ4R3EB1A |  | ZENER DIODE | RD4.3EB1 VZ=4.04-4.29V | D32 |  |  |  | 1 |
| 8 |  | QDZ5R6EB3A |  | ZENER DIODE | RD5R6EB3 VZ=5.61-5.91V | D37 | D45 |  |  | 2 |
| 9 |  | QQMAN6821N |  | I.C. | AN6821 9-PIN 1/20 DIVDER | U6 |  |  |  | 1 |
| 10 |  | QQMN1400BN |  | I.C. |  | U1 |  |  |  | 1 |
| 11 |  | QQM00555BA |  | I.C. | UPC555H | U4 |  |  |  | 1 |
| 12 |  | QQM01161AA |  | I.C. | UPC1161C | U9 |  |  |  | 1 |
| 13 |  | QQM01178AA |  | I.C. | UPC1178C | U7 |  |  |  | 1 |
| 14 |  | QQM01416AC |  | I.C. |  | U10 |  |  |  | 1 |
| 15 |  | QQM11225AB |  | I.C. | HA11225 FM-IF SYSTEM | U5 |  |  |  | 1 |
| 16 |  | QQOMN1203N |  | I.C. | MN1203 256-BIT C-MOS STATIC RAM | U2 |  |  |  | 1 |
| 17 |  | QQOMN6142N |  | I.C. | MN6142 16-PIN RADIO PLL SYNTHESIZER | U3 |  |  |  | 1 |
| 18 |  | QQ004049AA |  | I.C. | UPD4049 | U8 |  |  |  | 1 |
| 19 |  | QQ062504AT |  | I.C. |  | U11 | U12 |  |  | 2 |
| 20 |  | QTA0564ACN |  | TRANSISTOR | 2SA564A Q,R-RANK | Q31 |  |  |  | 1 |
| 21 |  | QTA0733XDA |  | TRANSISTOR | 2SA733 P,Q-RANK | Q13 | Q20 | Q45 | Q46 | 12 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
|  | P.W.BOARD ASSY | APSTU055DD |

|  | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. |  |  |  | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  |  |  |  |  | Q48 | Q49 | Q50 | Q51 |  |
| 2 |  |  |  |  |  | Q52 | Q53 | Q54 | Q55 |  |
| 3 |  | QTC0900XCA |  | TRANSISTOR | 2SC900 U-RANK | Q10 | Q11 |  |  | 2 |
| 4 |  | QTC0945AEA |  | TRANSISTOR | 2SC945A P,Q-RANK | Q12 | Q16 | Q17 | Q18 | 15 |
| 5 |  |  |  |  |  | Q19 | Q21 | Q22 | Q24 |  |
| 6 |  |  |  |  |  | Q25 | Q26 | Q34 | Q43 |  |
| 7 |  |  |  |  |  | Q44 | Q6 | Q7 |  |  |
| 8 |  | QTC1674XAA |  | TRANSISTOR | 2SC1674 L-RANK | Q3 | Q4 |  |  | 2 |
| 9 |  | QTC1675XBA |  | TRANSISTOR | 2SC1675 K,L-RANK | Q5 | Q8 | Q9 |  | 3 |
| 10 |  | QTC1826XBD |  | TRANSISTOR | 2SC1826 O, Y-RANK NO ACCESSORIES | Q28 |  |  |  | 1 |
| 11 |  | QTC1845XAA |  | TRANSISTOR | 2SC1845 E,F-RANK | Q41 | Q42 |  |  | 2 |
| 12 |  | QTC1846XAN |  | TRANSISTOR | 2SC1846 Q,R,S-RANK | Q30 | Q33 |  |  | 2 |
| 13 |  | QTD0636XBN |  | TRANSISTOR | 2SD636 Q,R-RANK | Q23 |  |  |  | 1 |
| 14 |  | QTD0837XXN |  | TRANSISTOR |  | Q27 |  |  |  | 1 |
| 15 |  | QTK0030XBT |  | TRANSISTOR GR | 2SK30 OR 2SK30A GR-RANK | Q57 |  |  |  | 1 |
| 16 |  | QTK0068XBA |  | TRANSISTOR | 2SK68 L,M-RANK | Q32 |  |  |  | 1 |
| 17 |  | QTL0045XA8 |  | TRANSISTOR | 3SK45 B-RANK | Q1 |  |  |  | 1 |
| 18 |  | QTL0049XBN |  | TRANSISTOR | 3SK49 Q-RANK | Q2 |  |  |  | 1 |
| 19 |  | RD25PJ100X |  | CARBON FILM R. | 0.25W 10 OHM 5% | R281 |  |  |  | 1 |
| 20 |  | RD25PJ101X |  | CARBON FILM R. | 0.25W 100 OHM 5% | R18 | R20 | R26 | R270 | 9 |
| 21 |  |  |  |  |  | R4 | R41 | R53 | R8 |  |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
|  | P.W.BOARD ASSY | APSTU055DD |

|  | REMARKS | PART CODE | PART. STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. |  |  |  | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  |  |  |  |  | R91 |  |  |  |  |
| 2 |  | RD25PJ102X |  | CARBON FILM R. | 0.25W 1K OHM 5% | R108 | R134 | R266 |  | 3 |
| 3 |  | RD25PJ103X |  | CARBON FILM R. | 0.25W 10K OHM 5% | R10 | R103 | R113 | R115 | 26 |
| 4 |  |  |  |  |  | R117 | R118 | R198 | R199 |  |
| 5 |  |  |  |  |  | R200 | R201 | R202 | R203 |  |
| 6 |  |  |  |  |  | R204 | R22 | R231 | R232 |  |
| 7 |  |  |  |  |  | R233 | R234 | R235 | R238 |  |
| 8 |  |  |  |  |  | R245 | R73 | R74 | R83 |  |
| 9 |  |  |  |  |  | R85 | R9 |  |  |  |
| 10 |  | RD25PJ104X |  | CARBON FILM R. | 0.25W 100K OHM 5% | R1 | R101 | R107 | R122 | 10 |
| 11 |  |  |  |  |  | R13 | R159 | R160 | R24 |  |
| 12 |  |  |  |  |  | R6 | R7 |  |  |  |
| 13 |  | RD25PJ105X |  | CARBON FILM R. | 0.25W 1M OHM 5% | R14 | R3 | R59 |  | 3 |
| 14 |  | RD25PJ122X |  | CARBON FILM R. | 0.25W 1.2K OHM 5% | R61 |  |  |  | 1 |
| 15 |  | RD25PJ123X |  | CARBON FILM R. | 0.25W 12K OHM 5% | R147 | R148 | R21 | R76 | 4 |
| 16 |  | RD25PJ124X |  | CARBON FILM R. | 0.25W 120K OHM 5% | R12 | R2 |  |  | 2 |
| 17 |  | RD25PJ151X |  | CARBON FILM R. | 0.25W 150 OHM 5% | R269 |  |  |  | 1 |
| 18 |  | RD25PJ152X |  | CARBON FILM R. | 0.25W 1.5K OHM 5% | R165 | R166 | R23 | R90 | 4 |
| 19 |  | RD25PJ153X |  | CARBON FILM R. | 0.25W 15K OHM 5% | R120 | R143 | R144 | R242 | 4 |
| 20 |  | RD25PJ154X |  | CARBON FILM R. | 0.25W 150K OHM 5% | R135 | R72 |  |  | 2 |
| 21 |  | RD25PJ181X |  | CARBON FILM R. | 0.25W 180 OHM 5% | R246 |  |  |  | 1 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | RD25PJ182X | | CARBON FILM R. | 0.25W 1.8K OHM 5% | R116 | | | | 1 |
| 2 | | RD25PJ183X | | CARBON FILM R. | 0.25W 18K OHM 5% | R126 | R128 | R63 | | 3 |
| 3 | | RD25PJ184X | | CARBON FILM R. | 0.25W 180K OHM 5% | R106 | | | | 1 |
| 4 | | RD25PJ220X | | CARBON FILM R. | 0.25W 22 OHM 5% | R5 | | | | 1 |
| 5 | | RD25PJ221X | | CARBON FILM R. | 0.25W 220 OHM 5% | R46 | | | | 1 |
| 6 | | RD25PJ222X | | CARBON FILM R. | 0.25W 2.2K OHM 5% | R60 | R75 | R81 | | 3 |
| 7 | | RD25PJ223X | | CARBON FILM R. | 0.25W 22K OHM 5% | R131 | R136 | R141 | R142 | 22 |
| 8 | | | | | | R205 | R206 | R207 | R208 | |
| 9 | | | | | | R209 | R210 | R211 | R212 | |
| 10 | | | | | | R213 | R214 | R215 | R216 | |
| 11 | | | | | | R217 | R218 | R265 | R43 | |
| 12 | | | | | | R49 | R58 | | | |
| 13 | | RD25PJ224X | | CARBON FILM R. | 0.25W 220K OHM 5% | R54 | R78 | | | 2 |
| 14 | | RD25PJ225X | | CARBON FILM R. | 0.25W 2.2M OHM 5% | R109 | | | | 1 |
| 15 | | RD25PJ271X | | CARBON FILM R. | 0.25W 270 OHM 5% | R138 | R55 | | | 2 |
| 16 | | RD25PJ272X | | CARBON FILM R. | 0.25W 2.7K OHM 5% | R155 | R156 | | | 2 |
| 17 | | RD25PJ273X | | CARBON FILM R. | 0.25W 27K OHM 5% | R133 | R151 | R152 | R25 | 5 |
| 18 | | | | | | R62 | | | | |
| 19 | | RD25PJ274X | | CARBON FILM R. | 0.25W 270K OHM 5% | R172 | R272 | R273 | R71 | 5 |
| 20 | | | | | | R87 | | | | |
| 21 | | RD25PJ331X | | CARBON FILM R. | 0.25W 330 OHM 5% | R132 | R259 | | | 2 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | RD25PJ332X | | CARBON FILM R. | 0.25W 3.3K OHM 5% | R28 | R88 | | | 2 |
| 2 | | RD25PJ333X | | CARBON FILM R. | 0.25W 33K OHM 5% | R105 | R80 | | | 2 |
| 3 | | RD25PJ362X | | CARBON FILM R. | 0.25W 3.6K OHM 5% | R64 | | | | 1 |
| 4 | | RD25PJ364X | | CARBON FILM R. | 0.25W 360K OHM 5% | R219 | | | | 1 |
| 5 | | RD25PJ392X | | CARBON FILM R. | 0.25W 3.9K OHM 5% | R161 | R162 | R163 | R164 | 6 |
| 6 | | | | | | R237 | R244 | | | |
| 7 | | RD25PJ393X | | CARBON FILM R. | 0.25W 39K OHM 5% | R110 | R111 | R179 | R56 | 4 |
| 8 | | RD25PJ394X | | CARBON FILM R. | 0.25W 390K OHM 5% | R239 | | | | 1 |
| 9 | | RD25PJ433X | | CARBON FILM R. | 0.25W 43K OHM 5% | R77 | | | | 1 |
| 10 | | RD25PJ470X | | CARBON FILM R. | 0.25W 47 OHM 5% | R11 | R19 | R275 | R42 | 4 |
| 11 | | RD25PJ471X | | CARBON FILM R. | 0.25W 470 OHM 5% | R251 | R27 | R45 | R50 | 5 |
| 12 | | | | | | R52 | | | | |
| 13 | | RD25PJ472X | | CARBON FILM R. | 0.25W 4.7K OHM 5% | R112 | R137 | R175 | R176 | 7 |
| 14 | | | | | | R181 | R182 | R183 | | |
| 15 | | RD25PJ473X | | CARBON FILM R. | 0.25W 47K OHM 5% | R124 | R125 | R127 | R129 | 9 |
| 16 | | | | | | R145 | R146 | R264 | R29 | |
| 17 | | | | | | R30 | | | | |
| 18 | | RD25PJ474X | | CARBON FILM R. | 0.25W 470K OHM 5% | R104 | R16 | R47 | | 3 |
| 19 | | RD25PJ562X | | CARBON FILM R. | 0.25W 5.6K OHM 5% | R119 | R139 | R271 | R44 | 4 |
| 20 | | RD25PJ564X | | CARBON FILM R. | 0.25W 560K OHM 5% | R102 | | | | 1 |
| 21 | | RD25PJ682X | | CARBON FILM R. | 0.25W 6.8K OHM 5% | R149 | R150 | R236 | R263 | 5 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | R57 | | | | |
| 2 | | RD25PJ683X | | CARBON FILM R. | 0.25W 68K OHM 5% | R15 | | | | 1 |
| 3 | | RD25PJ821X | | CARBON FILM R. | 0.25W 820 OHM 5% | R123 | R17 | R89 | | 3 |
| 4 | | RD25PJ822X | | CARBON FILM R. | 0.25W 8.2K OHM 5% | R153 | R154 | R171 | | 3 |
| 5 | | RD25PJ823X | | CARBON FILM R. | 0.25W 82K OHM 5% | R48 | R86 | | | 2 |
| 6 | | RD25PJ911X | | CARBON FILM R. | 0.25W 910 OHM 5% | R157 | R158 | | | 2 |
| 7 | | RD25TJ103X | | CARBON FILM R. | 0.25W 10K OHM 5% | R84 | | | | 1 |
| 8 | | RD25TJ104X | | CARBON FILM R. | 0.25W 100K OHM 5% | R82 | | | | 1 |
| 9 | | RD25TJ222X | | CARBON FILM R. | 0.25W 2.2K OHM 5% | R260 | | | | 1 |
| 10 | | RD25TJ223X | | CARBON FILM R. | 0.25W 22K OHM 5% | R114 | | | | 1 |
| 11 | | RD25TJ272X | | CARBON FILM R. | 0.25W 2.7K OHM 5% | R243 | | | | 1 |
| 12 | | RD25TJ330X | | CARBON FILM R. | 0.25W 33 OHM 5% | R267 | | | | 1 |
| 13 | | RD25TJ333X | | CARBON FILM R. | 0.25W 33K OHM 5% | R130 | | | | 1 |
| 14 | | RD25TJ393X | | CARBON FILM R. | 0.25W 39K OHM 5% | R177 | R178 | R180 | R282 | 4 |
| 15 | | RD25TJ472X | | CARBON FILM R. | 0.25W 4.7K OHM 5% | R174 | | | | 1 |
| 16 | | RD25TJ561X | | CARBON FILM R. | 0.25W 560 OHM 5% | R261 | | | | 1 |
| 17 | | RD25TJ681X | | CARBON FILM R. | 0.25W 680 OHM 5% | R258 | | | | 1 |
| 18 | | RD25VJ102X | | CARBON FILM R. | 0.25W 1K OHM 5% | R121 | | | | 1 |
| 19 | | RD25VJ104X | | CARBON FILM R. | 0.25W 100K OHM 5% | R274 | | | | 1 |
| 20 | | RD25VJ105X | | CARBON FILM R. | 0.25W 1M OHM 5% | R173 | | | | 1 |
| 21 | | RD25VJ391X | | CARBON FILM R. | 0.25W 390 OHM 5% | R31 | | | | 1 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |
|---|---|---|
| | P.W.BOARD ASSY | APSTU055DD |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. | | | | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | RD25VJ562X | | CARBON FILM R. | 0.25W 5.6K OHM 5% | R66 | | | | 1 |
| 2 | | RGHARJ272B | | M-OXIDE FILM R. | | R268 | | | | 1 |
| 3 | | RGHARJ561B | | M-OXIDE FILM R. | | R241 | | | | 1 |
| 4 | | RG1ANJ680B | | M-OXIDE FILM R. | 1W 68 OHM 5% | R185 | | | | 1 |
| 5 | | RG3ARJ330B | | M-OXIDE FILM R | | R257 | | | | 1 |
| 6 | | RPGNB20201 | | SEMI-FIXED VR. | 2K OHM B-CURVE | RV2 | RV3 | | | 2 |
| 7 | | RPGNB20301 | | SEMI-FIXED VR. | 20K OHM B-CURVE | RV5 | | | | 1 |
| 8 | | RPGNB20401 | | SEMI-FIXED VR. | 200K OHM B-CURVE | RV7 | | | | 1 |
| 9 | | RPJNB10306 | | SEMI FIXED VR. | | RV6 | | | | 1 |
| 10 | | RPJNB50102 | | SEMI-FIXED VR. | | RV4 | | | | 1 |
| 11 | | THG24B001W | | HEATER TRANS. | | T11 | | | | 1 |
| 12 | | TRA7JZ007S | | RF COIL | | T1 | | | | 1 |
| 13 | | TR07BA002S | | I.F.T. | | T10 | T9 | | | 2 |
| 14 | | TR10MA013S | | IFT | | T5 | T6 | | | 2 |
| 15 | | TR10MM018K | | RF COIL | | T12 | | | | 1 |
| 16 | | TR10MM019K | | RF COIL | | T13 | | | | 1 |
| 17 | | TR10MQ003M | | RF COIL | | T2 | T3 | | | 2 |
| 18 | | TR10MQ005M | | RF COIL | | T4 | | | | 1 |
| 19 | | TR10MZ004S | | I.F.T. | | T8 | | | | 1 |
| 20 | | VVL211GE84 | | FUSE LABEL | T630MA | | | | | 1 |
| 21 | | WDH824EEJJ | | COAXIAL CABLE | | N043 | | | | 1 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |  |
|---|---|---|---|
|  | P.W.BOARD ASSY | APSTU055DD |  |

| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. |  |  |  | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  | WDH833EEJJ |  | COAXIAL CABLE |  | N044 |  |  |  | 1 |
| 2 |  | WP05250DGT |  | PC JOINT |  | JU2 |  |  |  | 1 |
| 3 |  | WP07180DGT |  | PC JOINT |  | JU1 |  |  |  | 1 |
| 4 |  | WUGP17EEXX |  | HI-WRAP WIRE |  | N014 |  |  |  | 1 |
| 5 |  | WUG016EEXX |  | HI-WRAP WIRE |  | N015 |  |  |  | 1 |
| 6 |  | WUG016KKXX |  | HI-WRAP WIRE |  | N042 |  |  |  | 1 |
| 7 |  | WUG111EEXX |  | HI-WRAP WIRE |  | N01 |  |  |  | 1 |
| 8 |  | WUG117EEXX |  | HI-WRAP WIRE |  | N010 |  |  |  | 1 |
| 9 |  | WUG125EEXX |  | HI-WRAP WIRE |  | N055 |  |  |  | 1 |
| 10 |  | WUG2098BXX |  | HI-WRAP |  | N013 |  |  |  | 1 |
| 11 |  | WUG245EEXX |  | HI-WRAP WIRE |  | N02 |  |  |  | 1 |
| 12 |  | WUG308FFXX |  | HI-WRAP WIRE |  | N041 |  |  |  | 1 |
| 13 |  | WUG313EEXX |  | HI-WRAP WIRE |  | N011 |  |  |  | 1 |
| 14 |  | WUG343EEXX |  | HI-WRAP WIRE |  | N03 |  |  |  | 1 |
| 15 |  | WUG423EEXX |  | HI-WRAP WIRE |  | N04 |  |  |  | 1 |
| 16 |  | WUG509EEXX |  | HI-WRAP WIRE |  | N05 |  |  |  | 1 |
| 17 |  | WUG634EEXX |  | HI-WRAP |  | N06 |  |  |  | 1 |
| 18 |  | WUG712EEXX |  | HI-WRAP WIRE |  | N07 |  |  |  | 1 |
| 19 |  | WUG824EEXX |  | HI-WRAP WIRE |  | N08 |  |  |  | 1 |
| 20 |  | WUG915EEXX |  | HI-WRAP WIRE |  | N016 |  |  |  | 1 |
| 21 |  | WUG940EEXX |  | HI-WRAP |  | N012 |  |  |  | 1 |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |  |
|---|---|---|---|
|  | P.W.BOARD ASSY | APSTU055DD |  |

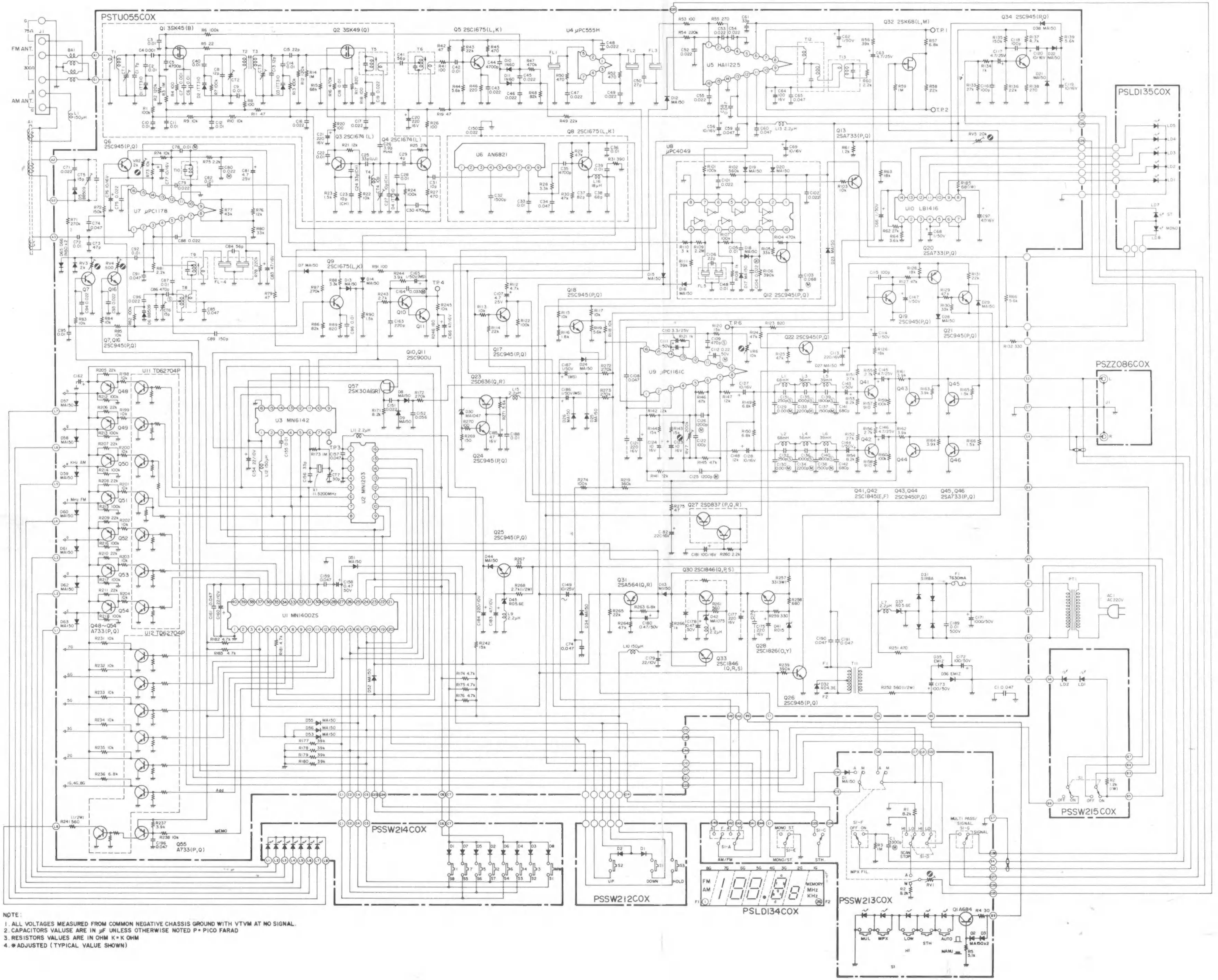
| ITEM | REMARKS | PART CODE | PART, STOCK NUMBER | PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. |  |  |  | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  | WWF245JJSS |  | SHIELDED WIRE |  | N045 |  |  |  | 1 |
| 2 |  | XAZ184001X |  | XTAL OSCILLATOR |  | X1 |  |  |  | 1 |
| 3 |  | YFL0000004 |  | FERRITE BEAD |  |  |  |  |  | 1 |
| 4 |  | YHF0P0001Z |  | FUSE HOLDER |  | FH1 | FH2 |  |  | 2 |
| 5 |  | YJF06S003Z |  | JUNCTION JACK | B6P-SHF-1AA | Y2 |  |  |  | 1 |
| 6 |  | YJF08S003Z |  | JUNCTION JACK | B8P-SHF-1AA | Y1 |  |  |  | 1 |
| 7 |  | ZZZ0000036 |  | F-BRAID WIRE. |  |  |  |  |  | 2 |
| 8 |  | APSTU055DD |  | P.W. BOARD ASSY | P.W. BOARD ASSEMBLY |  |  |  |  | 1 |
| 9 |  |  |  |  |  |  |  |  |  |  |

| EXPLODED ASSEMBLY | PART NAME | PART CODE |  |
|---|---|---|---|
|  | P.W.BOARD ASSY. | APSZZ086AA |  |

| ITEM | REMARKS | CYBERNET PART CODE | CUSTOMER'S PART, STOCK NUMBER | CYBERNET PART NAME | SPECIFICATIONS | SYMBOLIC OR EXPLODED VIEW NO. |  |  |  | Q'TY USED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  | PSZZ086C0X |  | P.W.BOARD | PRINTED W. BOARD ONLY |  |  |  |  | 1 |
| 2 |  | YJP02S009U |  | 2P PIN JACK |  | J1 |  |  |  | 1 |
| 3 |  | APSZZ086AA |  | P.W. BOARD ASSY | PRINTED W. BOARD ASSEMBLY |  |  |  |  | 1 |
| 4 |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |

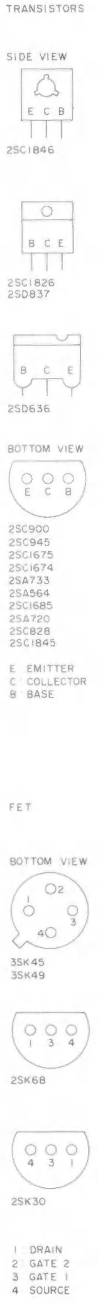
## NOTE.

# Schematic Diagram



NOTE:

1. ALL VOLTAGES MEASURED FROM COMMON NEGATIVE CHASSIS GROUND WITH VTVM AT NO SIGNAL.
2. CAPACITORS VALUSE ARE IN μF UNLESS OTHERWISE NOTED P = PICO FARAD
3. RESISTORS VALUES ARE IN OHM K = K OHM
4. * ADJUSTED (TYPICAL VALUE SHOWN)



**Cybernet Electronics Corporation**

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